JAN 24 1956

NINETY-SEVENTH YEAR

AMERICAN Gas Journal

JANUARY 1956

Only Magazine Published Exclusively for the Gas Utility Industry

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new—
from cover
to cover

1956

OUTLOOK ISSUE

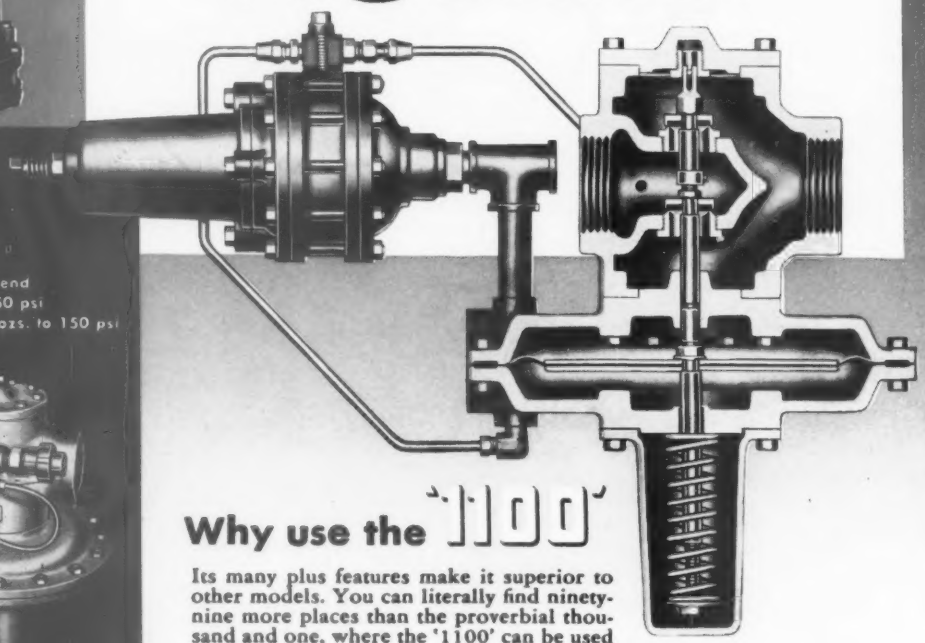
Vast Gas Utility Growth Predicted
. . . says AGA president

Best Year Ever for Manufacturers
. . . declares GAMA

LP-Gas Use To Greatly Increase
. . . experts foresee

Chaplin-Fulton

why? '1100' regulator



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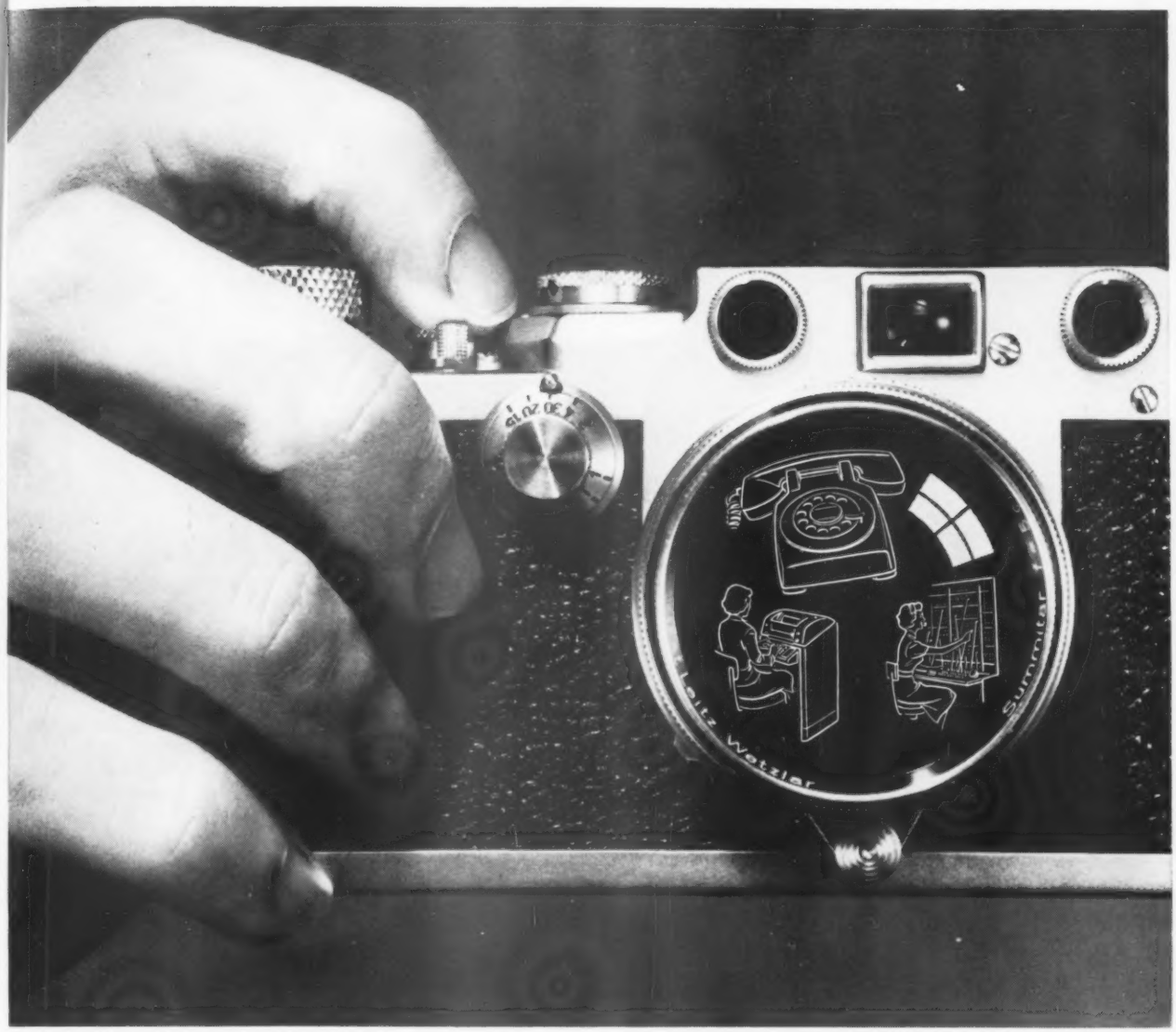

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CLEVELAND

memo: from the publisher

A short six months ago, we announced a new editorial direction for the American Gas Journal: *To become the only publication edited exclusively toward helping the engineering, operating, management and sales interests of the gas utility industry.*

Each of the subsequent months has brought something "new" to our favorite publication. Growth of the "new" Journal has been slow but sure. We have added to our staff of editors. We have conducted surveys throughout the industry to find out what our readers want. Everything — editorial content, format, typography — has been and will continue to be studied and improved in our efforts to bring you the very best publication possible.

With this issue, which begins the second half of American Gas Journal's 97th year of publication, you'll note numerous changes. Among them are a new design for the cover, heavier paper stock, better arrangement of contents, "to the point" editing, and improved appearance throughout the magazine.

A note about our cover; it employes a technique known as symmetrical design. If you drew a line vertically through the middle, you would have two even parts, each giving a static, restful, and stable balance. Symmetrical design was used for its quiet dignity, conservatism, and stability. *Which, we might add, reflects the entire theme of the American Gas Journal . . . service to the reader in a dignified manner.*

The results of our "change of direction" have been heartening. Reader and advertiser response has been terrific. Our circulation grows with each passing day. Acceptance by manufacturers of utility equipment is reflected in the advertising space scheduled for the coming year.

We are proud to be a part of an industry that continues to grow at a phenomenal rate. Our total endeavor will be directed at aiding each of you in this respect.

From all of us at AGJ to all of you in the industry . . . "best wishes for an even greater and more prosperous New Year in 1956."

Joe B. Stroud

NINETY•SEVENTH YEAR

AMERICAN Gas Journal

ANUARY, 1956 | Only Magazine Published Exclusively for the Gas Utility Industry

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ABOUT THE COVER . . . This is the first issue of the "new" American Gas Journal. It is "new" in the sense that we have changed our cover design, have a new and improved format and typography, and better arrangement throughout . . . all designed specifically for YOU, the reader. It is **not new** in one respect . . . AGJ will continue — as it has for 97 years — to serve its readers in a dignified and best possible manner. For this one issue only, we've "borrowed" the entire front cover from our advertisers to herald the advent of the only publication devoted EXCLUSIVELY to the gas utility interests. We hope you like it. We'll appreciate your comments . . . orchids or onions. Let us know.

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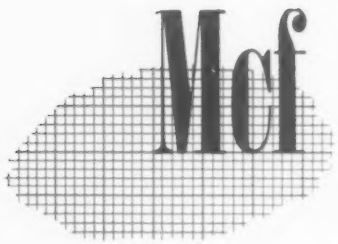

Public versus private ownership of utilities will be dragged through the political mud with intensity in 1956, observers feel. The gas industry will have to prepare itself for onslaughts from all sides, say industry leaders. It is being injected more and more into political mill. Political activity will be great during the year on all levels, especially national, with a presidential campaign in the offing, and utilities—gas, electric, and telephone—will be subjected to many charges, especially from proponents of public ownership who are expected to make big issues of "give-aways," big business favoritism, and "maltreatment" of consumers.

The public-private ownership battle was spotlighted at the year's end by AGA President Dean H. Mitchell. In a letter to member companies, he pointed out the growing influx in the Pacific Northwest of muncipal-owned and "co-op" companies into distribution activities. The long fight to bring gas to the area was backed by investor-owned companies. Now that the battle has been on, backers of non-profit cooperatives and municipally-owned companies have been pushing their plans as "emergency measures." A bitter struggle has ensued. To date, some nine Idaho communities have entered into agreements with bond houses to establish cooperative systems. Mitchell warned the investor-owned utilities that they will have to do a better job and do it sooner if they are not lose out in coming years.

SALESMANSHIP. To induce home owners to convert to gas, the Providence, Rhode Island, Gas Company has offered to install gas burners in furnaces at a rental fee of $2 per month.

A hard year is the prospect for the Federal Power Commission. The work load of all types of gas rate cases is expected to increase rather than diminish. The recent court decision on the "fair market price" of pipe line company produced gas (Panhandle Eastern Pipe Line case) will bring new troubles. Whether the Fulbright-Harris bill passes or fails to pass, it will mean more decisions to be made, more study of the industry, more work for the now overloaded commission and its staff.

East central area of South Carolina will receive natural gas service if the South Carolina Public Service Commission approves plans of a newly formed company—Carolina Pipeline Company—to construct an $8,700,000 pipe line distribution system to serve 14 communities. Gas would be brought from either Southern Natural Gas Company or Transcontinental Gas Pipe Line Corporation.

A new group—composed of mayors, utility leaders, consumer representatives, and small gas producers—has been formed to fight Federal regulation of natural gas producers. It will be headed by Mayor Alex M. Clark of Indianapolis. The group was formed as an answer to the "Council of Local Gas Companies" which was announced last month. Mayor Clark plans to take an active part in getting approval of the Fulbright-Harris Bill in the current session of congress. A foe of Federal regulation, Clark has accused a "handful of utilities of holding back from the public great savings brought into their operations by low-cost natural gas."

Three-miles-a-day clip has been reported as the construction rate of the Pacific Northwest Pipe Line. More than 750 miles of pipe were laid in the first 234 days after financing of the project was completed.

Sales of automatic control equipment for industrial uses have increased some 700 per cent in the last 25 years, compared to an increase in the general economy of about 325 per cent. Investment in automatic controls now represents between 8 and 10 per cent of total dollars spent on facilities.

Trans-Canada Pipe Lines President N. E. Tanner has announced that his company has contracts signed or in process of being signed that would assure the proposed pipe line of 80 per cent of its gas requirements. The agreements represent supplies of about 437,000,000 cu ft per day. Satisfactory negotiations for the balance of requirements are under way, he added.

More gas for Southern California is the goal of Southern Counties and Southern California Gas Companies, who have applied to the state PUC for permission to build a 236-mile, 30-in. pipe line from Topock, Arizona, to Newhall (Northern Los Angeles County). The new line would bring in an additional 177,013,000 cu ft of gas per day. El Paso Natural would be the supplier at Topock.

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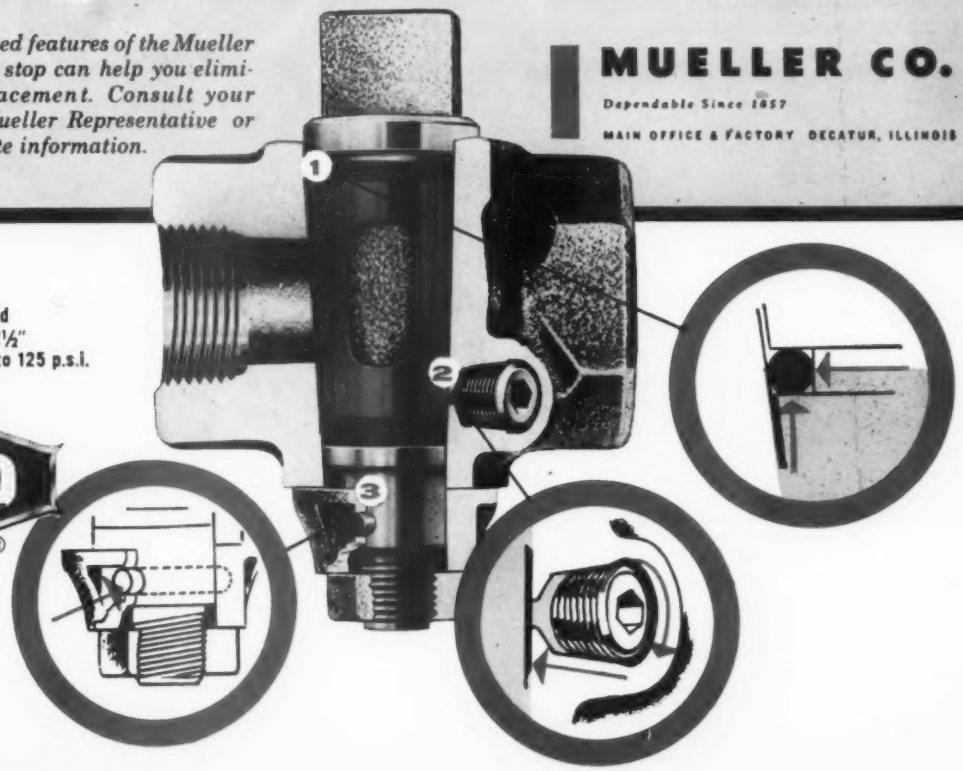

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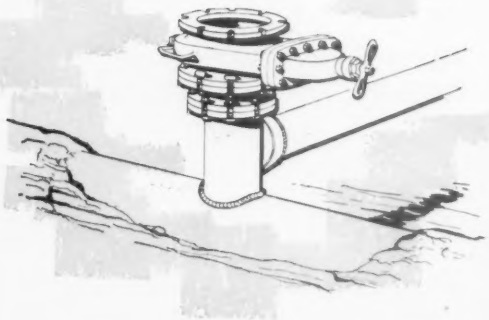
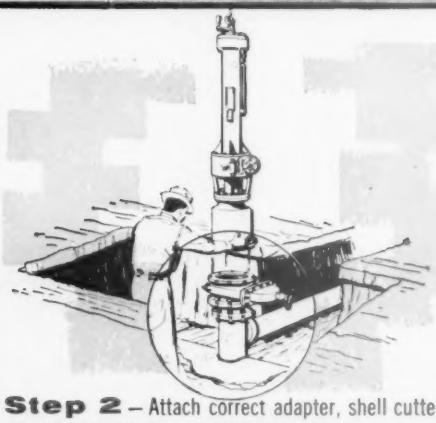
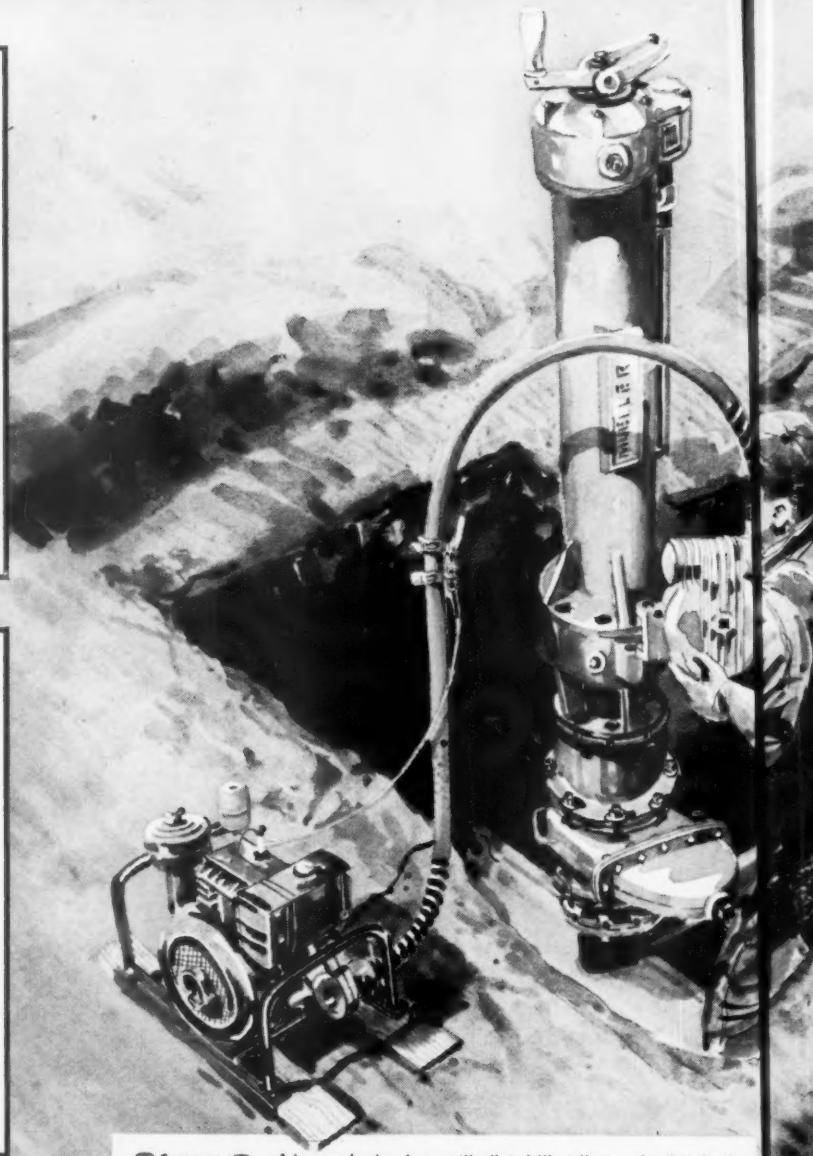


Step 1 – Attach fitting to main. Complete lateral to first valve. Test. Bolt adapter and gate valve to flange of fitting.



Step 2 – Attach correct adapter, shell cutter and pilot drill to Mueller C1-36 Drilling Machine. Coat shell cutter with Mueller Cutting Grease, retract boring bar. Attach drilling machine to gate valve. Open gate valve.



Step 3 – Advance boring bar until pilot drill strikes main. Set feed indicator at zero and engage automatic feed. Make cut, retract boring bar, close gate valve and remove drilling machine. Power source for C1-36 Drilling Machine may be H-600 Air Motor or H-602 Gasoline engine drive unit.

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Three different types of fittings may be used to run a lateral from steel mains. Temporary laterals may be run with the Mueller Save-A-Valve Drilling Nipple, which permits retrieving the gate valve when the line is abandoned. Permanent laterals may be run with the Flanged Tee or Extension Stopper Fitting. No gate valve is required and lateral stop-off is made with Mueller Line Stopping Equipment.

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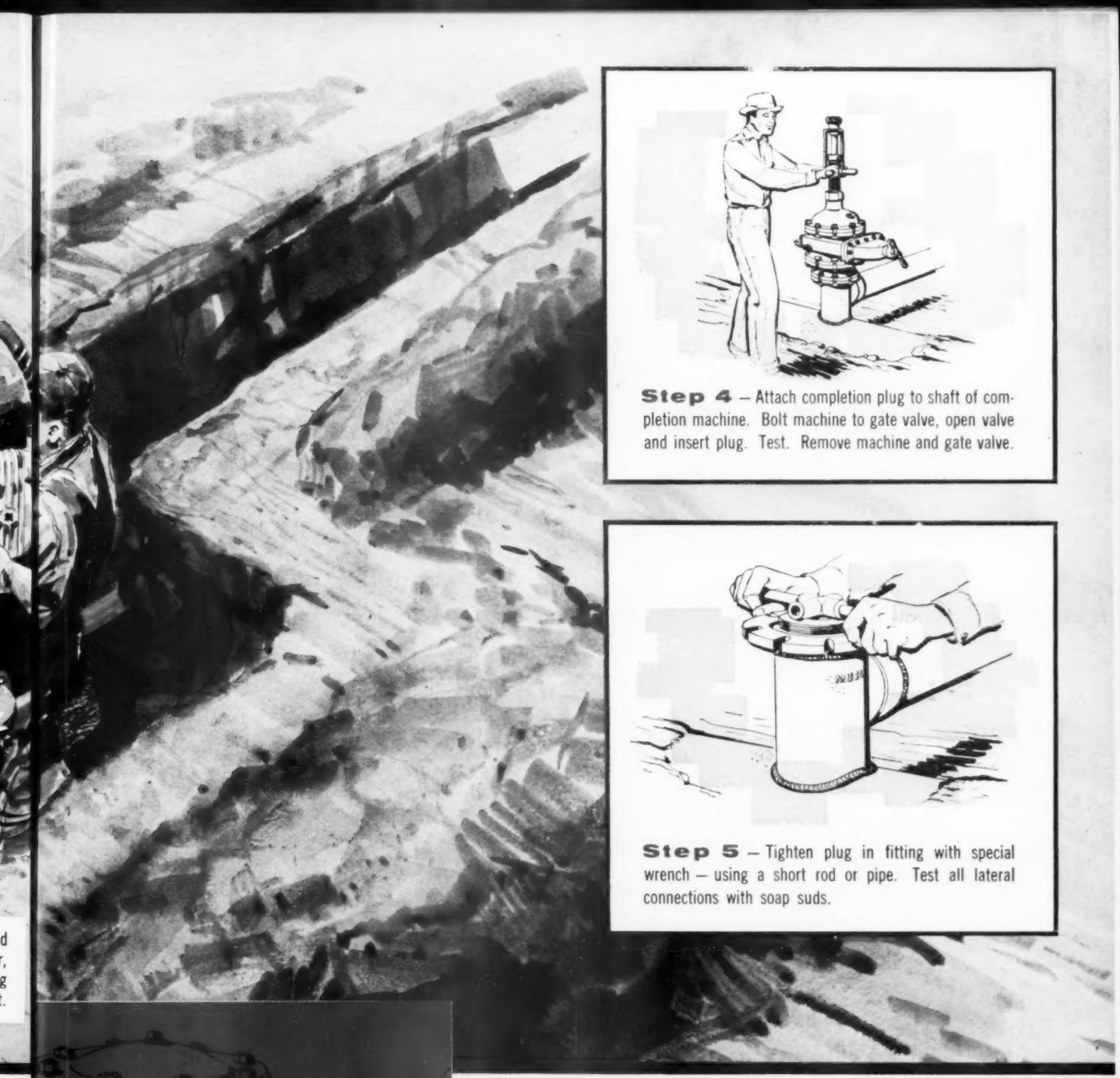
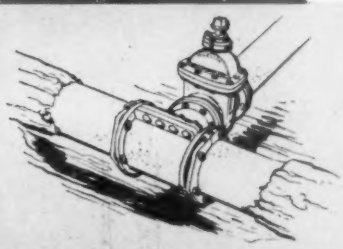
Regardless of fitting used, the installation procedure is similar once the fitting has been attached to the main. The entire operation is done under pressure, with no blowing of gas.



Step 4 – Attach completion plug to shaft of completion machine. Bolt machine to gate valve, open valve and insert plug. Test. Remove machine and gate valve.

Step 5 – Tighten plug in fitting with special wrench – using a short rod or pipe. Test all lateral connections with soap suds.

Step 6 – Place gasket on flange and bolt completion cap solidly in place. Lateral connection is now complete.



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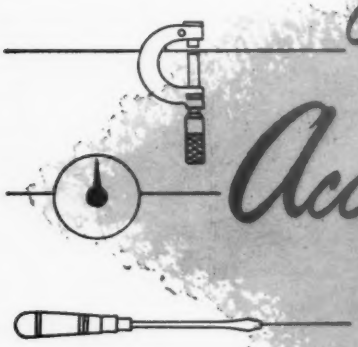

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FUEL FOR THOUGHT

agj editorial summary

SOME UNANSWERED QUESTIONS

Today, as never before, the gas industry needs harmony. In the face of increasing competition from all forms of energy sources, it is vital to the interests of everyone concerned with the gas industry to do his or her share in promoting such harmony. The industry's leaders are constantly giving loud and clear voice to this need.

But is there really harmony in the gas industry?

In one area . . . the Pacific Northwest . . . gas — natural gas — will soon make its debut, adding greatly to the resources and economic potential of an area that richly deserves it. The people of that area should certainly be thankful for the part played by *private enterprise* in the form of investor-owned companies in the long and difficult fight to provide their native area with natural gas.

But now that the battle has been won, and natural gas will soon be flowing through thousands of miles of pipe lines — paid for out of the pockets of individual citizens who consider the project a wise investment — the attitude of part of the populace in that area seems to favor public ownership, in the form of *municipal-owned* or *non-profit cooperative* gas distribution systems.

All utilities are "public" in the sense that they must live up to their franchises, which grant them the right of exclusive service to the public on certain conditions. Under our free enterprise economy, profit is certainly a big incentive to do the best possible job for the customer, even if it is restricted to 5 or 6 per cent by law. Publicly-owned, non-profit organizations do not have this incentive. Experience in some other areas of our nation have proved this latter type of operation relative to gas distribution systems as unrealistic and uneconomic.

There has been little help given the investor-owned gas companies operating in the Pacific Northwest in their fight against public ownership. The best aid they could receive would be a strong backing of public opinion. They need the support of the entire gas industry in this respect.

Where, though, will this help come from?

While the public-private battle rages in the far Northwest, other segments of our vast industry are lining up forces on both sides of questions . . . such as the Harris Bill . . . that certainly cannot bring any real harmony to the industry's ranks.

While we are talking about "unanswered questions," here's a good one, and one that requires considerable pondering.

Are we selling the real advantages of gas short? And selling them short for a few pennies?

In some quarters, talk is directed at the idea that if the price of gas — anywhere — goes up as much as 1¢ per thousand, that customers will drop the use of gas like it were hot potatoes.

Think about this for a minute. Gas is certainly a *premium* fuel. And there are other advantages. **The consumer does not have to supply one cubic inch of storage space for this fuel.** A flip of a valve and it's there . . . 24 hours a day, 365 days a year (366 in leap years).

If you compare gas cost on a strictly Btu basis, it may have reached the point of being pretty close — pricewise — to other fuels in some areas. Even at 10 per cent greater cost per Btu, it would still have advantages. No storage space.

There are still many potential consumers of natural gas . . . many of whom have desired it for a long time . . . and would be willing to pay a premium for the advantages it brings.

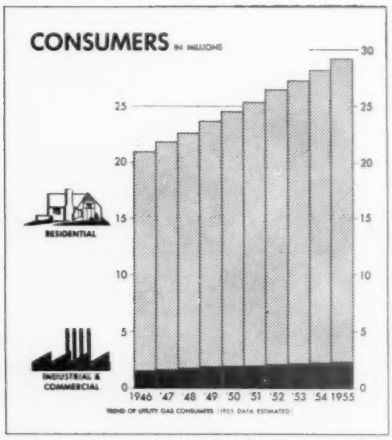
Why not sell gas on its advantages, too . . . instead of price alone?

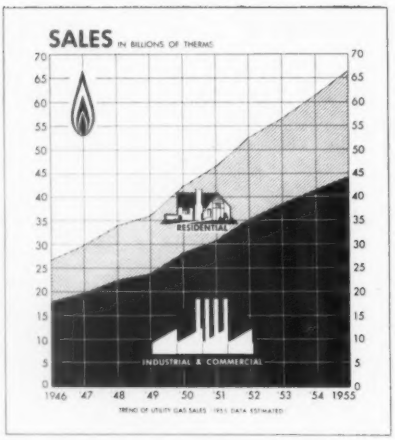
You can buy ball-point pens for 19¢ or $5.00. Automobiles for $5000 or $50 (used). Practically everything is priced at its value. **Why not gas?**

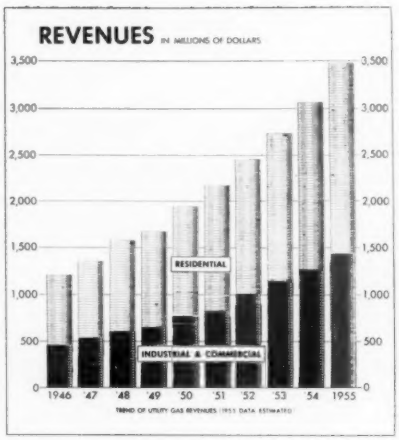
Why not sell a premium product for what it's worth? . . . instead of attempting to devalue it for some short-term political or economical advantage?

There are many unanswered questions in the gas industry.

We don't have the answers. Do you?







AGA President's Year-end "State of Union" Report . . .

1956 Seen As Record Year For Gas Utility Industry

Dean H. Mitchell, *President, American Gas Association*

NINETEEN FIFTY-FIVE WAS ONE OF the most successful in the history of the gas utility and pipe line industry. During the past year the industry reached new record highs in numbers of customers served with utility gas, in volume of gas sold to ultimate consumers and in revenues received from the sale of gas.

Reserves of natural gas at the beginning of 1955 were at an all-time high, despite a new record production figure in 1954. The industry added more than 1,000,000 new customers during 1955.

Natural gas systems continued to spread into new areas and to augment supplies in residential and industrial areas now served. With completion of the Pacific Northwest Pipe Pine, only two states in the nation will not be receiving natural gas. Expanded use of underground storage is making service possible to more customers with a minimum increase in distribution facilities.

After a careful review of the present record figures and the factors that were responsible for the successful achievements of 1955, most members of the American Gas Association predict another record year in 1956. There is an almost unanimous belief among gas utility and pipe line companies that new records will be established in all areas of gas service in the next 12 months.

Approximately 4500 miles of new natural gas transmission pipe lines in the United States were authorized last year by the FPC. More than 3000 miles of transmission line actually were laid with the remaining 1500 miles under way at the year-end.

More than 22,000 miles of natural gas distribution, storage, and other pipe lines, not requiring FPC approval, were constructed during the year. Total natural gas gathering, transmission, distribution, and storage pipe lines in the United States today is more than 445,000 miles. With an additional 50,000 miles of pipe line carrying manufactured and mixed gas, the nation's entire gas pipe line now is approaching one-half million miles, and will pass the 500,000 mile mark in 1956.

Gas utility and pipe line companies spent approximately $1,385,000,000 for new construction and expansion of facilities during 1955. The industry expects to spend an additional $1,205,000,000 for each construction in 1956. Estimates made by AGA Bureau of Statistics place total construction expenditures for the four years from 1955 through 1958 at more than $4,300,000,000. The gas industry now has nearly $16 billion in gross assets and is well on its way to becoming a $20 billion industry.

Statistical Review and Forecast

At the end of 1955, the gas utility industry was serving about 29,210,000 customers, including about 243,000 LPG customers served directly by gas utility companies. This was a gain of about 1,056,000 customers or an increase of 3.8 per cent over 1954, when the industry was serving about 28,154,000 residential, commercial, industrial and other customers. There were approximately 7,500,000 customers served with LPG in areas not on gas utility mains. The total of nearly 29,000,000 straight utility gas customers was a new record, as was the total for all gas customers.

More than 24,000,000 customers were receiving natural gas at the year-end, a gain of almost 2,000,000 customers, and an increase of 8.4 per cent over the 22,159,000 natural gas customers served at the end of 1954. Manufactured and mixed gas customers decreased to less than 5,000,000 customers, a decline of 14 per cent, as additional companies converted to use of straight natural gas.

The gas utility industry sold approximately 66,500,000,000 therms of gas during 1955, a new record volume. This was a gain of 8.2 per cent over the 61,428,200,000 therms sold in 1954.

Natural gas sales achieved a new high of 62,908,000,000 therms, up 8.4 per cent over the 58,000,000,000 therms sold in 1954.

TOTAL GAS UTILITY INDUSTRY CUSTOMERS, SALES AND REVENUES

Preliminary 1955 Compared with 1954

	1955	1954	Per cent change
Customers (at Dec. 31)			
Residential	26,894,900	25,947,000	+ 3.7%
Commerical	2,162,100	2,064,000	+ 4.8
Industrial	121,300	112,300	+ 8.0
Other	31,100	30,100	
Total	29,209,400	28,153,400	+ 3.8
Customers (Average)			
Residential	26,304,600	25,397,500	+ 3.6
Commercial	2,082,600	1,990,700	+ 4.6
Industrial	119,300	111,900	+ 6.6
Other	31,100	27,700	
Total	28,537,600	27,527,800	+ 3.7
Sales (thousands of therms)			
Residential	22,226,700	20,031,000	+11.0
Commercial	5,970,700	5,404,900	+10.5
Industrial	35,295,800	33,095,500	+ 6.6
Other	2,965,000	2,896,800	
Total	66,458,200	61,428,200	+ 8.2
Revenues			
Residential	$2,026,623,000	$1,782,670,000	+13.7
Commercial	434,405,000	377,749,000	+15.0
Industrial	932,652,000	820,515,000	+13.7
Other	79,648,000	71,210,000	
Total	3,473,328,000	3,052,144,000	+13.8

NATURAL GAS CUSTOMERS, SALES AND REVENUES

Preliminary 1955 Compared with 1954

	1955	1954	Per cent change
Customers (at Dec. 31)			
Residential	22,085,000	20,398,000	+ 8.3%
Commercial	1,818,000	1,651,000	+10.1
Industrial	96,000	83,000	+15.7
Other	29,000	27,000	
Total	24,028,000	22,159,000	+ 8.4
Customers (Average)			
Residential	21,210,000	19,719,600	+ 7.6
Commercial	1,705,000	1,572,400	+ 8.4
Industrial	92,000	81,600	+12.7
Other	28,000	24,800	
Total	23,035,000	21,398,400	+ 7.6
Sales (thousands of therms)			
Residential	19,908,700	17,830,300	+11.7
Commercial	5,492,800	4,909,100	+11.9
Industrial	34,574,800	32,407,100	+ 6.7
Other	2,931,800	2,867,600	
Total	62,908,100	58,014,100	+ 8.4
Revenues			
Residential	$1,675,412,000	$1,436,653,000	+16.6
Commercial	363,479,000	303,923,000	+19.6
Industrial	878,679,000	767,212,000	+14.5
Other	77,047,000	68,522,000	
Total	2,994,617,000	2,576,310,000	+16.2

Revenues from utility sales of gas nearly reached the 3½ billion mark, in achieving a new record total of $3,473,328,000, a gain of 13.8 per cent over $3,052,000,000 a previous record high established in 1954. Natural gas revenues increased 16.2 per cent to total $2,995,000,000, also an all-time high. Manufactured and mixed gas revenues were about $458,000,000, up 0.4 per cent over the previous year's total.

Pipe Lines and Gas Reserves

Full certification was granted during the year by the FPC for the construction of the American-Louisiana Pipe Line Company's 1200-mile line from Texas to Michigan and for the 1800-mile line of the Pacific Northwest Pipe Line Company from the San Juan Basin to the northwestern states. Both of these lines are well under way.

The position of the Pacific Northwest Company has been greatly strengthened by the recent decision of the FPC authorizing importation of Canadian gas. West Coast Transmission Company is now constructing its line to bring Pacific Northwest additional supplies of natural gas from the Peace River fields.

Underground storage operations increased substantially during the year ending December 31, 1954. At the start of 1955 there were 172 underground storage pools located in 17 states and an additional 12 pools were under construction. These active pools had an ultimate capacity of 1859 billion cubic feet.

There are 6395 active storage wells in operation in the 172 pools. It is estimated that the 12 pools under construction would add nearly 200,000,000,000 cubic feet of storage space for underground storage of natural gas. With new gas house heating customers estimated to be added for the next few years at a rate of about 1,200,000 per year, underground storage of gas becomes an increasingly important factor in stabilizing the gas load.

The gas industry spent nearly $75,000,000 on construction of the underground storage facilities in 1955 and will spend nearly $50,000,000 on such facilities in 1956. It has been estimated that about $187,000,000 will be spent on underground storage construction in the years 1955 through 1958.

Proved recoverable reserves of natural gas at the beginning of 1955 had reached a new high level of 211.7 trillion cubic feet, an increase of about 263 billion cubic feet over reserves at the beginning of 1954. Production of natural gas in 1954 reached a new peak of 9.4 trillion cubic feet, but new discoveries and extensions of revisions of previous estimates more than offset this tremendous use of natural gas.

Industry Market Expanding Rapidly

AGA statisticians estimate that a great potential market for sales of gas heating equipment exists in the United States today. With a maximum of promotional effort and product design improvement, the gas utility industry could sell more than 20,000,000 gas heating units of all types in the five years from 1955 through 1959. Actual sales of such heating units in the five years ending in 1954 amounted to 15,100,000 units. A potential market for nearly 60,000,000 gas appliances of all types exists in the United States for the next five years if consumer purchasing power remains at present levels.

It is anticipated that space heating requirements in 1957 should be 53 per cent ahead of 1954. Overall sales by the gas utilities in 1957 could total about 75 billion therms.

To meet accelerating needs for gas service, the gas industry will require 6,200,000 tons of steel pipe for the 1955 through 1958 period. Approximately 2,200,000 tons of steel were used in 1955 alone. Of the total amount about 3,000,000 tons will be in the form of 16 in. or larger diameter pipe, primarily used for natural gas transmission lines. An additional 199,000 tons of steel in other forms, and nearly 815,000 tons of cast iron will be required by the gas industry from 1955 through 1958.

Gas Appliances and Equipment

Aggressive merchandising and promotional efforts by gas utilities and appliance manufacturers and their dealers resulted in increased sales of gas appliances during 1955. Sales of gas ranges, exclusive of built-in types, totaled about 2,280,000, compared with actual sales of 2,023,000 gas ranges sold in 1954. Automatic gas water heater sales last year totaled 2,800,000 units an all-time high compared with 2,281,000 units sold in 1954.

Tremendous gains made in sales of gas house heating in past years continued to reflect in sales of central heating units, which last year totaled 1,146,000 units, or 200,000 units more than were sold in 1954. Sales included 850,000 warm air furnaces, 205,000 conversion units and 91,000 central heating units of other types.

Sales of gas refrigerators were the highest in recent years. Automatic gas clothes dryers established one of the best records in its brief history. Automatic gas clothes dryers sales in 1955 were over 350,000 units, compared with 260,000 units sold in 1954. It is conservatively estimated that there are more than 1,000,000 automatic gas clothes dryers in use today.

Sales of gas air-conditioning and gas

MANUFACTURED AND MIXED GAS CUSTOMERS, SALES AND REVENUES

Preliminary 1955 Compared with 1954

	1955	1954	Per cent change
Customers(at Dec. 31)			
Residential	4,588,000	5,318,000	—13.7%
Commercial	323,000	391,000	—17.4
Industrial	25,000	29,000	—13.8
Other	2,000	3,000	—
Total	4,938,000	5,741,000	—14.0
Customers (Average)			
Residential	4,860,000	5,433,700	—10.6
Commercial	356,000	396,200	—10.1
Industrial	27,000	30,000	—10.0
Other	3,000	2,800	—
Total	5,246,000	5,862,700	—10.5
Sales(thousands of therms)			
Residential	2,258,900	2,146,600	+ 5.2
Commercial	454,700	474,200	— 4.1
Industrial	718,000	684,900	+ 4.8
Other	32,600	28,600	—
Total	3,464,200	3,334,300	+ 3.9
Revenues			
Residential	$335,696,000	$331,309,000	+ 1.3
Commercial	66,081,000	69,232,000	— 4.6
Industrial	53,391,000	52,633,000	+ 1.4
Other	2,472,000	2,548,000	—
Total	457,640,000	455,722,000	+ 0.4

LIQUEFIED PETROLEUM GAS CUSTOMERS, SALES AND REVENUES

Preliminary 1955 Compared with 1954

	1955	1954	Per cent change
Customers (at Dec. 31)			
Residential	221,900	231,000	— 3.9%
Commercial	21,100	22,000	— 4.1
Industrial	300	300	—
Other	100	100	—
Total	243,400	253,400	— 3.9
Customers (Average)			
Residential	234,600	244,200	— 3.9
Commercial	21,600	22,100	— 2.3
Industrial	300	300	—
Other	100	100	—
Total	256,600	266,700	— 3.8
Sales (thousands of therms)			
Residential	59,100	54,100	+ 9.2
Commercial	23,200	21,600	+ 7.4
Industrial	3,000	3,500	—14.3
Other	600	600	—
Total	85,900	79,800	+ 7.6
Revenues			
Residential	$15,515,000	$14,708,000	+ 5.5
Commercial	4,845,000	4,594,000	+ 5.5
Industrial	582,000	670,000	—13.1
Other	129,000	140,000	— 7.9
Total	21,071,000	20,112,000	+ 4.8

incineration units also are reported to be increasing. Appliance research efforts are expected to greatly improve the efficiency, cost and sales of appliances in the future.

AGA Laboratories

Expanded facilities and improvements in operating procedures, enabled the AGA Laboratories at Cleveland and Los Angeles to provide greater service to the industry. Approximately 5700 new models of gas appliances were tested during 1955. Approvals for Canadian manufacturing companies also increased substantially.

Central heating appliances accounted for over 50 per cent of the appliance testing revenue. Testing of water heating equipment continued active, while domestic range activities centered around built-in sections, equipment with thermostatically controlled top burners and low input pilots.

Over 800 field and factory inspections of production models were made by the laboratories' inspectors prior to granting or renewing certification. An increase of about 400 per cent in unannounced inspections was made, supplemented by almost 300 inspections on users' premises.

Eighteen PAR financed research projects at the laboratories emphasized development of gas incinerators. An experimental incinerator has been developed that effectively reduces smoke and odor emission. Further performance improvements and simpler fabrication principles are being sought. Other research studies for domestic and commercial cooking, water and house heating and general gas utilization are under way.

Research bulletins and reports have been published providing advanced technical knowledge to the industry. The Approval Requirements Committee adopted 15 revised appliance, accessory and installation standards. More than 450 utility and manufacturer representatives were brought together through some 40 meetings to develop the new and revised appliance standards.

Washington Office

AGA's office in Washington is in continuous touch with the Federal Government. A running digest of all legislative matters in Congress affecting gas has been made available to member companies through 1955. Information concerning gas has been made available to Congressional committees on request, and individual requests by members have been filled.

FPC policies and actions in the area of regulation since the Phillips decision have been reported as they develop. The Washington office has aided Federal agencies in making fuel determinations and in writing specifications. Tax matters, from Congressional conception to Treasury regulation are under continuous observation and reporting.

Promotion, Advertising And Research

The second 10 years of the gas industry's Promotion, Advertising and Research (PAR) Program began in 1955. Several new projects were initiated, including the large-scale air-conditioning research program. An investigation has been launched to ascertain the possibilities of a national television program.

The PAR Public Information Program made substantial progress. Materials are being furnished and workshops conducted to benefit gas companies wishing to start or augment their own public information activities. An economic information program emphasizing awareness of the nation's vital stake in a strong privately managed gas industry has been launched. The use of gas and gas appliances has been publicized and promoted in women's magazines, shelter magazines, builders publications, as well as in special editions of leading newspapers throughout the nation.

A major revision in the over-all PAR subscription pattern provided a basis for voluntary pipe line support for promotion, advertising, utility research or public information activities. More active efforts have been made to demonstrate the many local benefits of various PAR activities to gas utilities and pipe lines.

These factors helped make 1955 one of the most successful years in PAR's history. A record of $2,341,293 was subscribed for the PAR program, an increase of $325,829 over the previous year. Of this sum, $1,171,540 was designated for Promotion and Advertising, $1,109,753 for Research and about $60,000 for Administration, including Gas Industry Development Program activities.

Last year brought 23 new subscribers to PAR—16 renewing their support after several years' lapse and 7 making their first subscriptions. Three pipe line companies made regular subscriptions to the PAR program. Nearly $100,000 was made available for the Public Information program during its first year.

PAR Pipe Line Research likewise had record subscriptions of $250,385, though these fell short of the $300,000 quota set by pipe line operating executives to carry out the most essential pipe line research activities.

Recognition of the importance of economical, competitively priced gas all-year air conditioning devices

MIXED GAS CUSTOMERS, SALES AND REVENUES
Preliminary 1955 Compared with 1954

	1955	1954	Per cent change
Customers (at Dec. 31)			
Residential	3,795,000	3,827,000	— 0.8%
Commercial	234,000	236,000	— 0.8
Industrial	22,000	22,000	—
Other	1,000	1,000	—
Total	4,052,000	4,086,000	— 0.8
Customers (Average)			
Residential	3,796,000	3,833,700	— 1.0
Commercial	236,000	236,200	— 0.1
Industrial	22,000	22,400	— 1.8
Other	1,000	1,300	—
Total	4,055,000	4,093,600	— 0.9
Sales (thousands of therms)			
Residential	2,044,000	1,861,200	+ 9.8
Commercial	342,600	340,500	+ 0.6
Industrial	638,600	580,400	+10.0
Other	13,900	10,200	—
Total	3,039,100	2,792,300	+ 8.8
Revenues			
Residential	$281,882,000	$261,109,000	+ 8.0
Commercial	42,840,000	41,800,000	+ 2.5
Industrial	44,617,000	40,849,000	+ 9.2
Other	1,115,000	960,000	—
Total	370,454,000	344,718,000	+ 7.5

MANUFACTURED GAS CUSTOMERS, SALES AND REVENUES
Preliminary 1955 Compared with 1954

	1955	1954	Per cent change
Customers (at Dec. 31)			
Residential	793,000	1,491,000	—46.8%
Commercial	89,000	155,000	—42.6
Industrial	3,000	7,000	—57.1
Other	1,000	2,000	—
Total	886,000	1,655,000	—46.5
Customers (Average)			
Residential	1,064,000	1,600,000	—33.5
Commercial	120,000	160,000	—25.0
Industrial	5,000	7,600	—34.2
Other	2,000	1,500	—
Total	1,191,000	1,769,100	—32.7
Sales (thousands of therms)			
Residential	214,900	285,400	—24.7
Commercial	112,100	133,700	—16.2
Industrial	79,400	104,500	—24.0
Other	18,700	18,400	—
Total	425,100	542,000	—21.6
Revenues			
Residential	$53,814,000	$70,200,000	—23.3
Commercial	23,241,000	27,432,000	—15.3
Industrial	8,774,000	11,784,000	—25.5
Other	1,357,000	1,588,000	—
Total	87,186,000	111,004,000	—21.5

sparked the initiation of a $300,000 PAR research activity in this field. PAR endeavors in this field have been closely coordinated with concurrent work of leading manufacturers in the field, so as to assure maximum over-all benefits and the least duplication of effort.

Substantial progress has been made toward the development of a laboratory model gas incinerator. The time is much nearer when utilities can expect a completely odorless and sootless incinerator to serve as a source for additional revenues.

Last year, AGA budgeted more than $1,000,000 for national advertising.

Record-breaking, all-gas spectaculars dominated the PAR-financed national advertising program for 1955. By co-ordinating editorial copy with advertising copy, these sections gave full impact to the industry's theme that gas is the modern fuel for modern Americans.

Publications carrying the 190 pages of combined editorial and advertising copy included, Saturday Evening Post, Better Living Magazine, Restaurant Management, Woman's Home Companion and American Builder Magazine. Hundreds of thousands of reprints of this material featuring gas appliances and gas services were distributed, in addition to the millions of copies distributed to regular readers.

Gas Industry Development Program

The 10 Action Demonstration Cities continued active experimentation during the year with new and more intensive marketing, servicing and advertising techniques. Several cities have adopted these techniques as a part of their permanent way of doing business. Efforts were made to encourage additional participation in the program by gas utility companies. Significant progress was made during the year to eliminate obsolete or unnecessary local gas appliance requirements.

Sectional Activities

The new General Management Section held its first annual conference during 1955 and participated actively in the Annual Convention at Los Angeles. Seminars on "Accident Prevention Through Informed Supervision" were conducted by the Accident Prevention Committee in several states during the year.

The Accounting Section sponsored another successful electronics seminar in Philadelphia. AGA and Edison Electric Institute Accounting Sections have contracted with Harvard University for a research project for the development of electronics equipment and procedures for use by the electric and gas industries.

The fifth biennial school for industrial and commercial gas men was conducted during 1955 and brought the number of gas men who have attended this educational project to more than 700. New requirements for installation of consumer-owned gas piping on industrial and commercial premises were prepared and issued. Work is progressing on similar recommendations for installation of industrial equipment, which with the piping installation recommendations will become American Standard.

Continuing its policy of long-range planning, the Residential Gas Section recommended advertising and promotional campaigns that were incorporated into the regular PAR program. New installation techniques were included in a revision of the "Guide for Installers of Heating Equipment" and more than 50,000 copies of the guide have been sold to gas utility companies for local use.

The AGA Home Service program was an important source of assistance and information to home service departments of member companies. In the gas industry there are now more than 1600 trained home economists.

The Utilization Bureau reports that participation in the atomic test in Nevada showed that the underground gas systems probably would be very little damaged by nuclear weapon attack. Appliances would suffer damage in varying degrees depending upon their proximity to ground zero.

The Operating Section continued work on a number of projects aimed at helping solve technical problems facing the industry. These projects ranged from surveys on operating techniques to preparing manuals and developing standards. Some of the projects were: gas conditioning, history of gas company use of radio facilities, peak load shaving, underground storage statistics, deliverability problems, design of high and low pressure services and plastic pipe standards.

Conclusion

The gas industry constantly seeks to improve both its product and its service. Gas appliances today are the most modern household devices that can be installed in American homes. New sales techniques and promotional plans are bringing the industry greater shares of the new home and replacement market. Natural gas reserves continue to gain and success has been achieved in the production of substitute gases for natural gas to augment natural resources in that field. With so many factors in the industry's favor it is evident that the gas utility and pipe line companies cannot fail to move ahead to new record high levels in 1956. ★ ★

Meter Sales Station Protected from Fire by water fog spray

Stanley Owens
Director of Safety
Transcontinental Gas Pipe Line Corporation

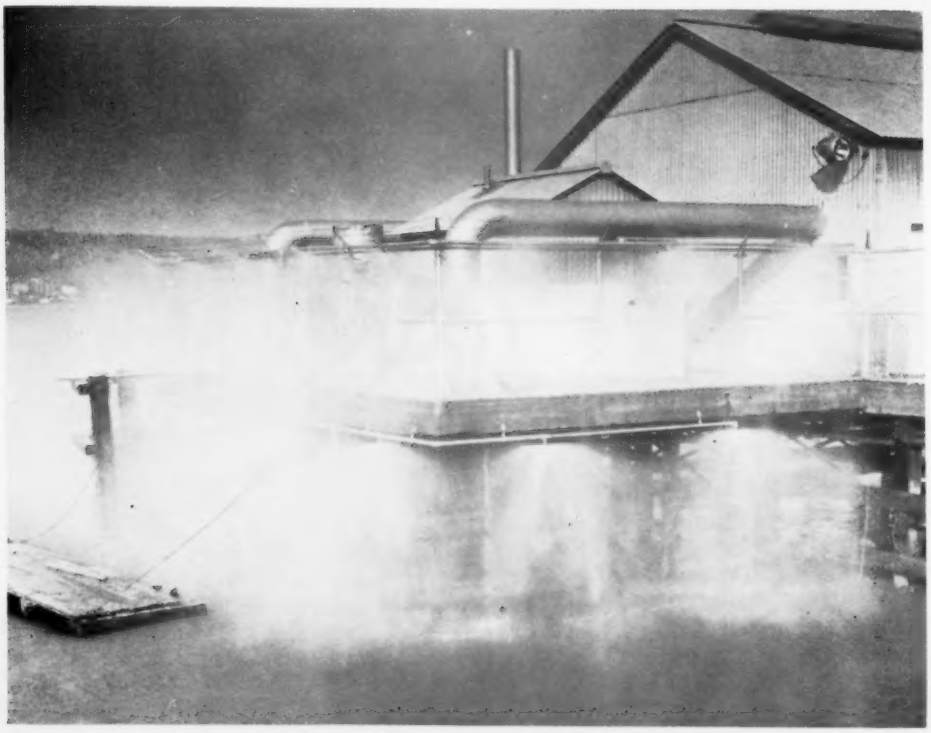
Major gas sales measurement facility located on pier in Hudson River protected by water-forg sprinkler system

FIRE PREVENTION AND FIRE PROTECTION are words that are commonly used together. The objective of both, however, is loss prevention, or loss reduction. Loss prevention has several basic aspects among which are safety to personnel and protection of plant property. In numerous instances, however, both of these factors take a second place to continuity of operation of a natural gas transmission system.

To insure continuity of operation, Transcontinental Gas Pipe Line Corporation has installed on its Manhattan sales meter station a water-fog system for the protection of the pier structure, approximately 40 ft by 140 ft in size, which supports this gas metering station located in the Hudson River at 134th Street.

This facility, largest of its type in the nation, supplies and meters the majority of gas fed through the Hudson River Crossing into the City of New York. A second entry is made into New York City through a crossing at the Narrows.

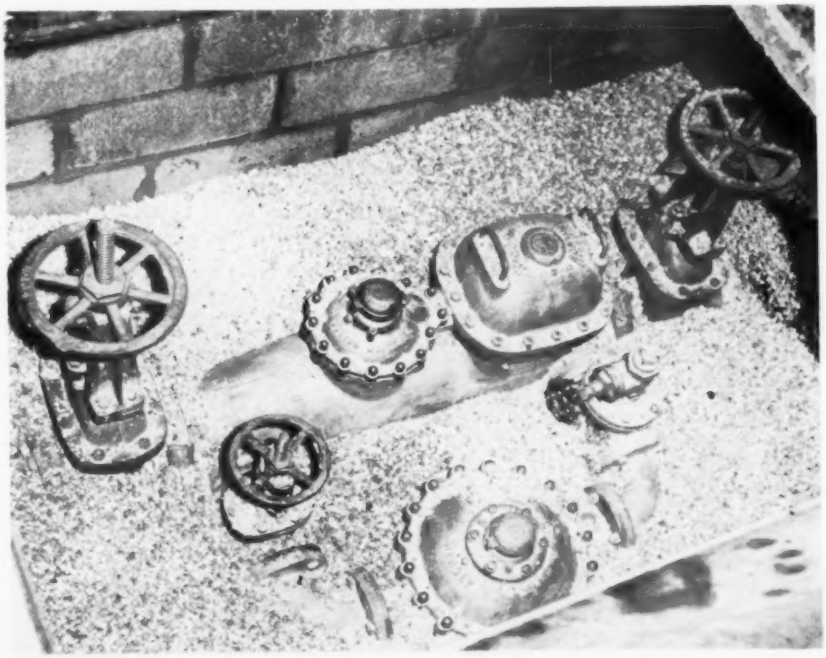
The basic idea of such protection found its origin in the minds of Trans-



Safety executives inspect the first Turn-on of system through two 4-in. post indicator valves. Left to right: Stanley Owens, Safety Director, Transcontinental Gas Pipe Line Corporation; James Quirk, Pipe Line Dept., Transcontinental Gas Pipe Line Corporation; Howard Cook, Assistant Safety Manager, Philadelphia Electric Company; W. E. Rosnagel, Safety Engineer, Consolidated-Edison Comapny, New York; Charles W. Fuller, Safety Director, Empire Gas & Fuel, Ltd., Wellsville, New York; and Joseph J. Lang, Gas and Electric Sub-station Department of Consolidated-Edison Company, New York.

View of pier from adjoining work pier looking at southeast corner.

Safety representatives inspect Fire Flow Meter in meter pit. (Below) Hersey compound 1200 gal per minute flow meters and valves.



continental engineers interested in loss prevention who were seriously concerned about the proximity of an old wooden pier a few feet south of the Transcontinental metering station.

The pier is used by excursion boats and for occasional loading and unloading of coal barges during the summer months. It is also frequented by fishermen, some of whom are not particularly careful about where they build the fires to fry their fish.

A fire in this dilapidated wooden structure, coupled with a south wind, might easily subject the nearby supporting structure for the metering station to a severe exposure fire and in a matter of minutes cause serious damage.

After considerable discussion and testing, a Rockwood WaterFOG system was selected and designed not only to provide protection against possible exposure fires from the pier to the south, but also to provide exposure protection from fires that might be floating on the water either in the form of a burning derelict, scow or in the form of liquid flammable materials.

The design, therefore, included installation of a water-fog curtain extending the full west side of the pier supporting the metering station and surrounding both ends. The remainder of the east side which is more protected and sheltered than the sides away from the shore was left unprotected as it can easily be reached by hose lines from the land.

The major question arose in considering this installation as to whether a pump should be installed to provide adequate water pressure. A water flow test, however, indicated that the supply was amply but that the pressure was between 40 and 45 psi.

The decision was made to utilize the supply without the addition of the booster pump, and the results were good since the discharge from the nozzles not only combines the necessary coarse spray which is required to penetrate through updraft and wind conditions, but a large percentage of very fine spray for minimum heat absorption.

During one test, the fine spray was noted to drift a distance of more than 150 feet.

Actually, the system is very simple. It involves a 6-in. connection to a 12-in. city water main. This connection is metered by means of a Hersey fire flow meter consisting of a proportional meter in the main line, a weighed check and a by-pass meter for detecting small flows.

From the meter pit supply piping extends approximately 100 ft to two 4-in. post indicator valves, each of which controls about half the water-fog heads on the pier.

On the south end of the pier, one row of heads extends around the pier at the level of the pier deck, with a second layer of heads attached to the cyclone fence approximately six feet above the deck and so designed as to provide a protective shield for the riser gas piping and valves.

Thus, operation of the valve for the south section of the system will provide a water curtain extending from above the top of the fence to the river level below, with the water-fog pattern being continuous, without any gaps and having a depth from front to back of 10 feet.

The second 4-in. valve supplies the heads at pier deck level extending from a point near the middle of the west side of the pier down to the north end, around the north end and south on the east side a short distance.

Three additional heads were installed at the eave line on the north end of the meter building to provide a measure of protection against exposure fires which might be floating on the river.

There are a total of 40 WaterFOG heads installed. The heads selected are of the Rockwood type T single orifice spray heads, which provide for a solid cone of discharge and have a maximum size waterway to minimize the probability of being plugged with foreign materials.

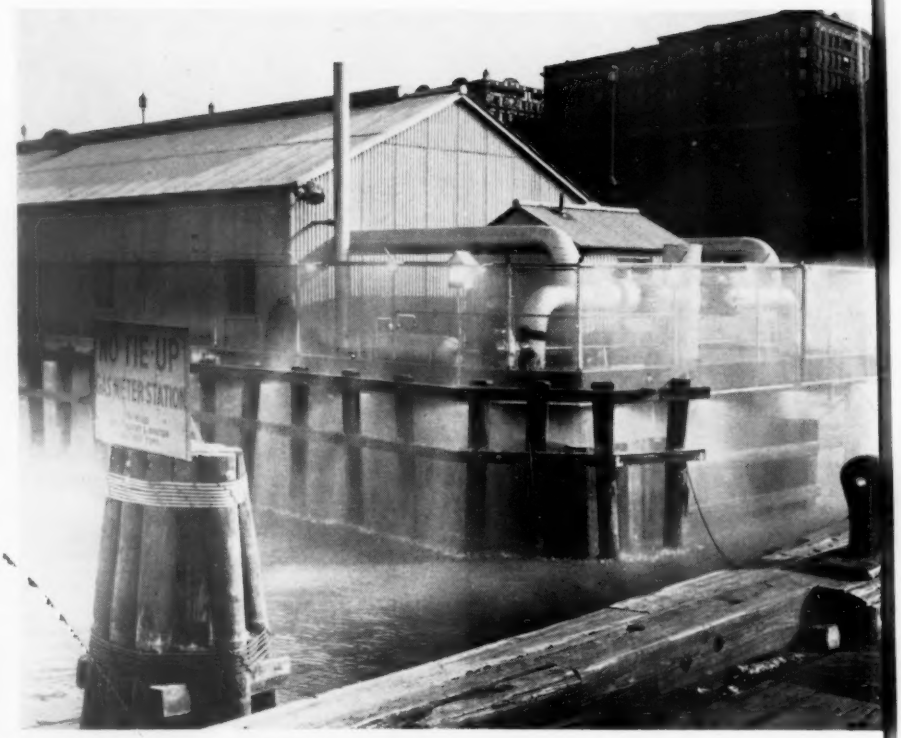
All piping was made oversize in order to reduce friction losses and provide for maximum operating pressure at the heads. Under actual test with both systems operating, the city water pressure at the control valves only dropped approximately 0.5 psi with a flow estimated at close to 1000 gal per minute.

The system is provided with automatic drains to drain off any condensation which may accumulate during period of humid summer weather and, in addition, there are drain valves for piping where water could be trapped.

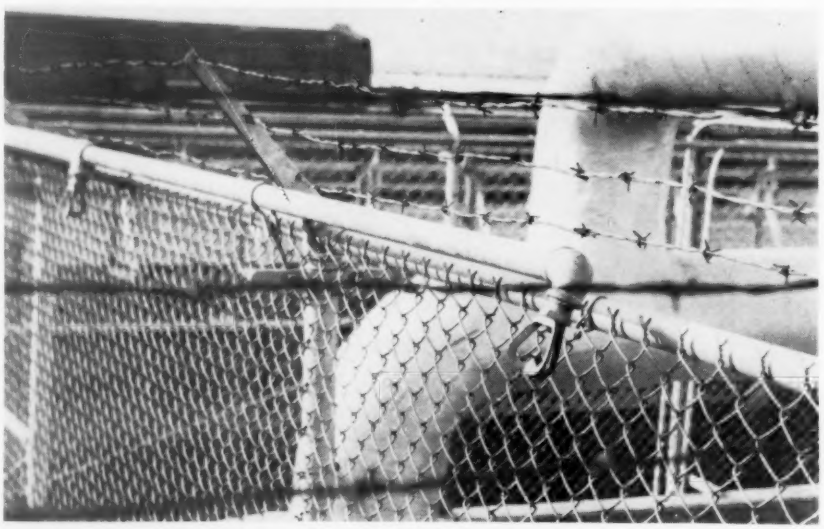
It is commonly known and understood that wood is a combustible material and that steel does not normally burn. One factor, however, that is frequently neglected is the fact that steel will no longer support the load for which it is designed if the temperature of the steel is permitted to rise beyond a certain limiting point.

In the event of a severe exposure fire, the unprotected steel columns supporting the gas metering station might be heated above this critical temperature in a matter of a few minutes.

It is definitely established, however, by previous tests by Underwriters Laboratories and numerous others, that a water spray curtain having a total depth from front to back of one foot or more, is substantially opaque to the transmission of radiant energy from a fire.



First turn-on Southwest corner of pier.



T-type nozzle installation on WaterFOG system.

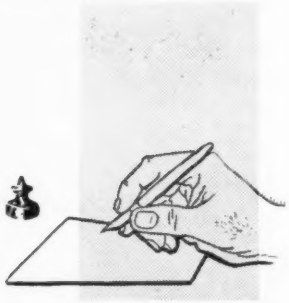
In addition, it is quite obvious that if water is actually impinged on the steel itself, that that steel will be kept wet and as long as the steel is wet it is axiomatic that the temperature cannot be more than 212 F.

The system installed at the metering station is designed to utilize both of these factors to maximum advantage.

Transcontinental is taking a sound approach in loss prevention. The company's position is that when a fuel, such as gas, even when handled under high pressure is contained within properly maintained pipe lines and similar enclosures, it is an inert and safe material. The safety inspection and maintenance program is designed to insure that the gas does remain where it belongs and that, therefore, the hazards of fire or explosion from within the station are extremely remote.

Thus, protection against loss or damage from exposure fires which are obvious hazards, was a logical step to safeguard continued operation of the station. The Rockwood WaterFOG was designed and installed to accomplish this objective. ★ ★ ★

Second of a series



Communication:

to write better, write simply and briefly

Dennis Murphy

ALL communication through words is **verbal** whether it's spoken or written. About 90 per cent of all business is carried on by **oral** communication, but the other 10 per cent that's **written** is the part that counts. It's like the cream on the milk.

Business writing—memos, letters, and reports—is extremely important because it confirms our talks, verifies our research, and defines our transactions. Talking may dissolve into air, but writing stands as a permanent record.

Then why do engineers, lawyers, accountants, and geologists in the oil industry—indeed, most men in business generally—write with pompous words, involved sentences, and a dull heavy style? Bad writing is like being too fat: People grumble and complain about it but seldom try to remedy the trouble. They know something's wrong but don't always realize what it is.

This article tries to show exactly what it is, why it happens, and what we can do about it.

We've all read that the Gettysburg Address contains only 266 words and the Ten Commandments, 297; yet our government's OPA order to reduce the price of cabbage required 26,911 words. **This is no joke; it is a crime.**

Lincoln had little formal education, but he taught himself to write superbly well. That's why I say *you can train yourself* in all the communication skills—thinking, observing, writing, reading, talking, and listening—if you really want to.

Here's a Sample of Government Writing

"Unless the Office of Price Administration or an authorized representative thereof shall, by letter mailed to the applicant within 21 days from the date of filing application disapprove the maximum price as reported such price shall be deemed to have been approved, subject to nonretroactive written disapproval or adjustment at any later time by the Office of Price Administration."

We read this 60-word sentence half a dozen times but still can't understand it. What's the matter? Obviously, it's the writing or the reader. Sometimes we begin to doubt our own intelligence. Let's rewrite it:

"You must wait three weeks before you can charge the ceiling price you applied for. OPA can always change that price. If they do, they will write you a letter."

In three short sentences using 30 words we turn a hodgepodge into a readable communication. Two keys to easy understanding are:

(1) short sentences, and
(2) plain everyday language.

Here's One From the Oil Industry

"In emergencies, prepare Form 134 in the same manner as directed under A, above, and forward it to the SM&M Section on any workday; or, at locations outside the General Office, if the emergency necessitates shipments from the General Office on the same day as that on which the requisition is being made, telegraph or telephone (as appropriate) the requisitions of the location to the supervisor involved at the General Office, who will prepare Form 134 covering the telephone or telegraph request in the same manner as dircted under A, above, forwarding the last copy to the location originating the request, and all other copies, to the Comptroller, 'Attention: SM&M Section.'"

Here is a whole instruction letter in one sentence of 111 words. But as a communication it fails completely because nobody can understand it. Its repetitions are needless, and it emphasizes a process instead of the human beings involved.

The men who wrote this letter revised it themselves by using five short sentences, cutting out the deadwood, and talking *to* the reader:

"In emergencies, prepare Form 134 as shown in A above. Send it to the SM&M Section on any workday. For shipments on the same day, telegraph or telephone your request to the supervisor at the General Office. He will prepare Form 134 for your request. He will send you the last copy but send the Comptroller all other copies, marked 'Attention: SM&M Section.'"

Here's One From Business

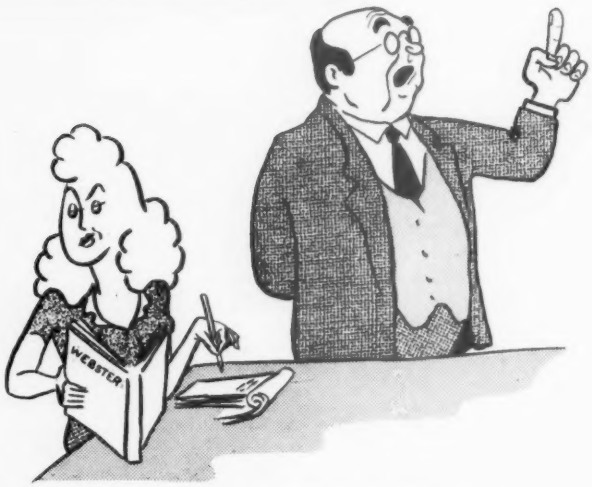
A man from the field comes into the main office. His manager greets him warmly: "Why, hello, Jim. It's good to see you; how's everything out in Centralia? Heard you got married and think it's swell. Sit down and have a cigar, old man. You're goin' to lunch with me, too, after while."

Ten days later the manager writes to Mr. James Smith:

Dear Sir:

Regarding the inquiry concerning Order F-407 of the 12th inst., please advise regarding approximate date of disposi-

Keep your words simple . . .



. . . simplicity of writing or wording . . .

tion of said material in accordance with instructions as per April 1, 1955.

Thus a warm-hearted manager becomes a cold and formal rubber-stamp, changes into a different person, the minute he starts a letter. Why should he turn into a stuffed shirt? Writing is a natural means of communication, like walking or talking. If only he would write simply and clearly!

What's Wrong Here?

These samples of communication in business, industry, and government are not exaggerations. They are typical. Our writing in the oil industry is shot through with stilted jargon of the worst kind. When it isn't flowery, it's ponderous. When it isn't filled with hackneyed trade terms, it's cluttered up with verbs in the passive voice or with a constant beating-around-the-bush with words.

Yet American business men have a practical down-to-earth approach to daily problems on their jobs. They desire, above all else, efficiency. In their work they cut through irrelevant details to arrive at workable decisions. In their common sense they are almost uncanny with analyses that lead to results.

But often when they write anything—memos, letters, or reports—they deviate, repeat, or effervesce. They get all balled up, fail to come to grips with their ideas, and seldom hit the nail on the head—much less clench it. It is ironical that men so progressive and productive can come up with writing so outmoded and wasteful.

They will ride in nothing but the latest streamlined cars, work with nothing but precision instruments and electronic machines of the best make, and live in nothing but modern homes with functional equipment of the newest model. Yet their daily writing is often a shambles, a shame, or a sham!

If a piece of machinery breaks down, they know immediately what to do. If their own communication breaks down, they are helpless.

How Did We Get That Way?

First. One reason for our poor writing is **tradition.** We inherited it from the nineteenth century when our ancestors (God rest them!) chose to say "exterminate the illumination" for "put out the light." A hundred years ago it was the custom to speak of "pedal extremities," "unmentionable social diseases," and "passed away into the Great Beyond."

The twentieth century, however, is one of scientific truth and accuracy. For better or for worse, our age has brought in a simplicity seen in our streamlined architecture, trains, automobiles, furniture, clothing, machinery—everything. It has brought in a writing, too, that is simple and functional. Why hasn't business writing kept pace?

Second. Another reason for bad writing is a *desire to impress* with showy language, especially when there's little to say. This pose works on a few who know no better, but most people aren't gullible. They can smell artificiality a mile off and detect it right away in a politician's speech, a minister's sermon, a professor's lecture, or a business man's letters and reports.

Third. A third reason for poor writing, of course, is *fuzzy thinking.* If a man can't think straight he can't write straight. He will use and misuse a great number of words as a smokescreen. Then he confuses and confounds his reader—but not for long. Words can hide a multitude of sins; but they can never make up for the absence of thought, and any reader knows when he's being bamboozled.

Ghost Writing

Much of our business writing, too, is done for someone else. Or it is jointly done by many writers and cleared by many departments, where each author puts in his two cents' worth. Each one writes differently and wants every qualifying detail included exactly as he words it.

But too many cooks spoil the broth, and the net result is a hodgepodge that sounds like a lot of fuzzy thinking. The resultant mess is faulty communication, although each individual responsible for it is really a good thinker. No one has any pride of authorship, and no expert has simplified the final version.

Why do we overlook the importance of editing our work? We always plead that we don't have time to do this, but we should take time to read and edit each important piece of writing.

Why Our Writing Is Hard To Read

Some people believe a stricter adherence to correct grammar, spelling, and punctuation will achieve clear simple writing. This is a mistake. Good grammar, spelling, and punctuation are always necessary, but they are not the causes of unreadable writing.

The chief causes are:

1. *trite and pretentious words*
2. *long tangled-up sentences*
3. *useless repetitions*
4. *weak verbs in the passive voice*

"John *hit* the ball" uses the verb *hit* in the active voice; "The ball *was hit* by John" uses the same verb in the passive voice. Notice the difference?

Let's take a simple example. A sports writer reporting a baseball game writes: "Lemon struck out Williams and ended the game." This tells who did what. If we found this same statement in business writing it would probably read: "The contestation *was terminated* as a result of the fact that three strikes *were thrown* by the pitcher to the batter."

. . . keep your mind on what you are writing.

When you get an idea, write it down.

Twice too many words, and the stress is on an abstract game instead of on specific human beings, the players. It is awkward, indirect, and dull because it insists on passive verbs and avoids active ones. Nobody in business ever "does" anything; things "are done." Nobody ever "refers" to anything; but "reference is made" to everything!

The basis of better communication is to tell *who* does *what*, first of all, and then tell *why, where, when,* and *how*. Occasionally it isn't possible, or even advisable, to tell this much. But business writing in the past has been so obviously secretive that sometimes it has brought suspicion upon itself and even investigation from the outside. What on earth do we have to hide?

The Thinking Behind It

In the nineteenth century, apparently, the job was more important than the man who did it. The work was emphasized, but the worker was relegated to a secondary or subordinate place. And, as a result, we have all seen how men organize themselves for strength to gain this importance once denied.

Compare these sentences thoughtfully: (1) This work shall be done by this employee. (2) This employee shall do this work. (3) You shall do this work.

Sentence (1) glorifies a man's work by making it the subject, but subordinates man himself by making him a part of the phrase of agent.

Sentences (2) and (3) put a man on a level with his work. They make the laborer worthy of his hire by raising his position, elevating him, dignifying him. Is there any greater morale builder for men? These sentences also replace the weak passive verb "shall be done" with the active verb "shall do." Automatically they bring in the personal pronoun when they use the active voice.

Sentence (3), the shortest, is also the easiest to write and the easiest to understand. Instruction letters like it, for example, are as simple, clear, and direct as the recipes in a cookbook.

Remember Your Reader

The purpose of business writing is to communicate. No transfer of meaning can take place without readers. A good writer, then, always works with his readers in mind.

Know your audience. For example, if your letter is for a highly trained consultant, you may need technical and polysyllabic words. On the other hand, if your letter is for 8000 employees in a company, you cannot make it too simple.

Put yourself in the reader's place. Will he understand you in the way you want him to? What can you say to interest him? Are you giving him the *right* information and *all* that he needs? How can you persuade him to do the work you want done?

Write directly to him. Try to visualize the receiver of your communication. Make him feel that he's as good as you are, that he's not being talked down to. Remember, you're not writing to the wall or to space; you are always writing to somebody. That reader of yours is a human being, too.

And simple writing means not only that he can understand each sentence you write, but also that he cannot possibly misunderstand it.

Tips That Pay Off

1. *Organize your thoughts.*
2. *Use simple words.*
3. *Use short sentences.*
4. *Use brief paragraphs.*
5. *Use personal pronouns.*
6. *Use active verbs, not passive ones.*

Why Simple Writing Is Best

(1) **It makes communication more efficient.** Each of us becomes a more articulate citizen when we write in clear simple words. Long ago Euripides said, "The only slave is he who cannot express his thoughts." Trying to simplify our communication, we come to closer grips with our ideas and become clearer thinkers. In doing this, we save our readers many doubts and much confusion.

(2) **It saves the company both time and money.** And time is money. This is an important material view to take. Let's illustrate.

Suppose it takes a staff writer 3 hard-spent hours to rewrite an instruction letter that goes out to 1000 employees. Suppose it saves each of them only 5 min to read it and understand it correctly. This letter, then, saves 5000 min or over 83 man-hours for the company.

Thus it has cost 3 hr in the main office to save 83 hr among all the workers. Figure that out in actual dollars and cents saved on thousands of pieces of writing each year, and we see why progressive firms are beginning to hire writing advisers and consultants.

(3) **It promotes better human and industrial relations.** After all, every company is made up of men and women working together toward a common goal. Any firm's greatest achievement depends upon every worker's doing a useful and needed task smoothly.

In our writing we must always consider our reader, the other fellow, whether he is the humblest or the highest. We can't look down our noses and write like snobs. We can't lord it over and write like dictators. We can't bellow out a lot of words and write like fools or windbags.

Clear simple writing is democratic writing because it's the only kind that everybody can understand. Business writing must reach everybody. As the NEW YORK NEWS used to instruct its reporters, "Tell it to the Sweeneys and the Stuyvesants will understand, but tell it to the Stuyvesants and the Sweeneys may *never* understand."

Simple writing helps to eliminate differences, controversies, and misunderstandings that arise from communication that is confusing. Many conflicts and disputes, even strikes and wars, often arise from messages that are obscure or misleading.

Simple writing, of course, can never solve all of our ills. But it is a fine lubricant for the intricate machinery of business and will help to keep it running smoothly and efficiently. **So let's simplify our writing.** ★ ★ ★

In Eastern Oklahoma, gas utility corrosion engineers are using a . . .

FEATURE
American Gas Journal

Coal Miner's Auger

. . . makes work easier and saves time of one extra man each day

If McAlester, Oklahoma, had not been in a coal mining area where deposits of burnt shale hastens corrosion of underground gas mains, Consolidated Gas Utilities Corporation's extensive cathodic protection program might not have been necessary.

But as it's right in the middle of Oklahoma's coal country, peopled by many old-timers who used to mine the hard way, Consolidated found a handy gimmick to help solve this corrosion problem.

It's a gadget that can be equally helpful in underground corrosion survey, whether in McAlester or any other place that might have the same soil conditions that this area has.

Consolidated's No. 1 customer at McAlester happens to be the U. S. Naval Ammunition Depot, which spreads over a 45,000 acre area south of the city. It is serviced through a seven-inch gas transmission line, eight miles long.

When crews took their probe bars to examine the condition of this line, they found Oklahoma's hard, dry, sometimes rocky soil, uncooperative to an exasperating degree.

When the probe bar failed on this particular job, Dick Vegher, Consolidated's McAlester Division corrosion engineer, and Truel Adams, engineer from the Lawton, Oklahoma, Division, went into conference with Howard R. Holcomb, division manager, and James F. Dominic, division superintendent, to discuss the possibility of getting through six to eight inches of hard top soil, as well as curbing additional costs.

Dominic recalled his father's early mining days and among several old pieces of mining equipment in his possession, remembered a tool called a coal miner's "auger." It was used in mines many years ago to bore "shot holes" before explosive charges blasted the coal loose from its bed.

It sounded like a solution to the problem of penetrating hard crust of topsoil which defied the probe bar. A T-type handle was welded onto the instrument, making it easier to handle during operation. It was immediately put into service and the corrosion survey crew found the job simplified.

The coal miner's auger itself has been replaced by the more efficient pneumatic drill, so a search is underway for more of these relics for use by other Consolidated crews.

The tool is saving many hours of labor and an extra man has been eliminated each day on the survey jobs.

Coal mining, which posed the corrosion problem in the first place, helped find the answer to corrosion survey and cathodic protection in McAlester.* *

Consolidated Gas Utilities Corporation officials examine coal miner's auger, modified with a T-handle. The auger is used to penetrate hard top soil.

Consolidated's corrosion crew shown making an installation of a magnesium anode on the McAlester-Naval Depot 7-in. gas transmission line.

LP-Gas Use Breaks All Records

In a rise of 17% over 1954 sales pass 6 billion gallon mark—more than half used in home heating

Geo. R. Benz
Manager, Engineering Dept.
Paul W. Tucker
Technical Representative, Engineering Dept.
W. F. DeVoe
Assistant to Sales Manager
Phillips Petroleum Company
Bartlesville, Oklahoma

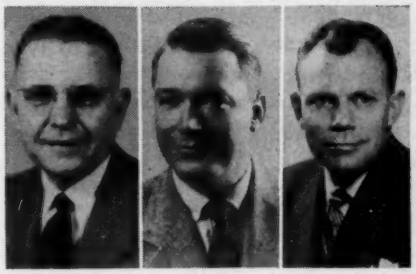
LP-GAS sales in 1955 increased by a whopping 880,467,000 gal which is the largest increase ever in the 33-year history of the industry. This represents a 17.2 per cent gain over 1954 and is remarkable when one considers that the industry has been characterized by phenomenal growth. This increase caused total sales to soar over the six billion gallon mark to an estimated 6,006,000,000 gal.

. . . . . **DOMESTIC AND MOTOR FUEL,** up 15.3 per cent to 3,661,000,000 gal. House heating is the largest domestic use — motor fuel gains are impressive.

. . . . . **INDUSTRIAL AND MISCELLANEOUS,** increased by 7.3 per cent to total of 431,000,000 gal. LP-gas proved its versatility by advancing in spite of continued natural gas extensions.

. . . . . **GAS MANUFACTURING,** decreased by 10.9 per cent to a total of 171,000,000 gal to continue trend started in 1951.

. . . . . **CHEMICAL MANUFACTURING,** use of LP-gas even outstripped the up-swing in the chemical industry by advancing 20.2 per cent for a total of 1,262,000,000 gal.



C. R. Benz P. W. Tucker W. F. DeVoe

Domestic and motor fuel

The domestic and motor fuel market for LP-gas in 1955 is estimated at 3,661,000,000 gal for an increase of 15.3 per cent over 1954. This increase of 487,000,000 gal exceeds the entire industry sales in 1941. House heating, which is the biggest single factor in the domestic growth, is spreading rapidly northward as people become acquainted with the cleanliness and convenience of LP-gas. Expansion and extensions of natural gas lines does cause some temporary dislocation of LP-gas customers though it helps by showing more people the advantages of gas and the net effect is that more people want LP-gas. Central heating is on the upswing, especially in new housing units.

Further indication of the trend toward house heating and larger individual users is the fact tank sales are up about 25 per cent. As contrasted to 1954, the summer sales of LP-gas held up much better. The switch to LP-gas for tobacco curing and crop dehydration continues. LP-gas, having already established itself as the ideal fuel for plumbers pots, now finds a growing market as the best fuel for tar and asphalt kettles. LP-gas for weed burning and weed control is definitely picking up and should not be overlooked as a good load-builder. It is estimated that there are between 6500 and 7000 LP-gas bulk plants in the U. S.

The use of LP-gas for motor fuel is one of the fastest growing uses. It is estimated that 671,000,000 gal of LP-gas were used in internal combustion engines in 1955. This is a 22.6 per cent increase and represents about 11 per cent of the total industry sales. Motor fuel gains were significant in nearly all parts of the country. The biggest users are: Trucks, tractors, buses, irrigation and drilling engines.

There are now over 250,000 LP-gas tractors in the United States. LP-gas tractor conversions were up 71 per cent for the first six months and carburetor sales (excluding those for tractors) were up 87 per cent. In some areas, dealers report that LP-gas tractors are outselling gasoline or diesel units ten to one.

Truck fleet operators are changing to LP-gas as service station facilities become more numerous and accessible. Recent surveys show over 3350 locations where LP-gas motor fuel service is available. Taxicab fleets are also being converted. Truck fleet op-

erators are interested in LP-gas for more reasons than lower oil consumption, less ring wear and more mileage between overhauls. LP-gas is proving to be the answer to cargo refrigeration and cargo heating. Cities are finding it advantageous to convert their road rollers and garbage trucks to LP-gas. Ready-mix type concrete trucks are finding LP-gas doubly advantageous because it is as desirable for the small motor which turns the mixer as it is for the large truck motor — easier to fuel and maintain.

The interest in LP-gas for industrial tractors and lift trucks which really made tremendous gains in 1954 continued in 1955. The fact that maintenance is reduced and that there are less noxious odors in the LP-gas engine exhaust are only two reasons why many fleets of such units are being converted to LP-gas. Most of the larger lift-truck manufacturers now offer U.L. approved factory-equipped models. Aircraft and auto manufacturers, airlines, steel mills, food processors, chemical plants, lumber mills are only a few of the larger industries who are converting their materials handling equipment to LP-gas.

The use of LP-gas for irrigation pumps continues to increase in spite of the advances of natural gas in this market. A recent survey of 33,537 irrigation wells in the high plains area of Texas showed that 46 per cent used LP-gas, 35 per cent used natural gas and the remainder either gasoline, diesel fuel or electricity.

Practically all major LP-gas appliances show a healthy sales increase this year. LP-gas range sales increased an estimated 11 per cent for a total of 455,000. Sales of automatic LP-gas water heaters are estimated at about 350,000 — almost 13 per cent over 1954. LP-gas warm air furnace sales are estimated at 71,800 or 8.4 per cent of the total of this type of gas appliance. Direct heating appliances and recessed wall units total 289,900 — 19 per cent of the total of this type appliance. LP-gas floor furnaces represented 25 per cent of the total, or 40-000 this year.

Industrial and miscellaneous

The demand for LP-gas for industrial and miscellaneous uses totalled 431,000,000 gal which is an increase of 7.3 per cent over 1954. Though natural gas took over some of this market, the increased level of overall business activity and new applications kept this market on the increase. LP-gas for flame cutting is making gains. One interesting new market is the use of LP-gas in uranium refinery operations. Stand-by plants are being added to take advantage of interruptable rates and as a protection against winter-shut-down. The severity of the winter, however, is the determining factor in this latter market.

Gas manufacturing

The utility use of LP-gas is estimated at 171,000,000 gal or a decrease of 10.9 per cent as compared to 1954. The swing to natural gas is the story here though L-P-gas is proving popular in new housing developments. There is an important industry development though in the increased cooperation between gas utility companies and the LP-gas industry. More joint gas promotion was seen in 1955 than any year in history. This will doubtless continue with increased benefits to all.

Supply

The production capacity of the LP-gas industry continues to increase. Twenty-two new plants came on stream in 1955 with a total production capacity of nearly 850,000 gal per day. It is estimated 12 new plants will be added in 1956 with a production capacity approaching a half a million gallons per day. The industry has the potential production capacity to meet large additional demands for LP-gas. An increase in market price would justify the recovery of larger quantities from existing plants.

Storage

Large increases were seen in 1955 in LP-gas storage facilities in both the conventional aboveground steel storage tanks and in underground storage facilities. It is estimated that the LP-gas underground storage capacity presently available totals 602,700,000 gal. There is an additional 292,000,000 gal of underground storage either under construction or proposed. If all of this storage is completed as planned there would be an ultimate total capacity of 894,700,000 gal of underground LP-gas storage. Although most of the underground storage is in salt beds or domes, one cavern in chalk was being completed in 1955 (while one in solid granite was being planned). According to the most recent figures about 400,-000,000 gal of LP-gas were in underground storage prior to the heavy withdrawal months in the last quarter.

There was more interest shown in refrigerated storage of LP-gas in 1955 but none definitely announced. Such storage would be in insulated vertical tanks at low temperatures and pressures.

Regulations

LP-gas men have a big stake in the Harris Bill passed last summer by the U. S. House. A companion measure, the Fullbright Bill, is now awaiting action in the Senate. This important legislation would retain for consumers the benefits of competition but lift utility-type federal regulation from gas producing.

Already federal regulation of natural gas producers seems to be decreasing supplies of natural gas, from which nearly 70 per cent of LP-gas is derived. Latest drilling records show a 12 per cent decline in gas well completions in 1955. Also indicating a future decline in production, only 2.3 trillion cubic feet of new gas reserves were committed to large interstate pipe lines in 1954, compared with 6.4 trillion in 1953. If this trend is not halted by passage of the Harris Bill, LP-gas dealers will be faced with shorter supplies and higher prices.

The Federal Power Commission has recently said its authority extends back to sales of casinghead gas from each individual well—which is before LP-gas is extracted—if any of the residue gas is destined to move in interstate markets.

And, if federal regulation of gas production is allowed to continue, what will stop it from swallowing up other segments of the petroleum industry—including LP-gas? Thus the life of the LP-gas industry as a free competitive enterprise is endangered.

Outlook

The increase in LP-gas sales for 1955 was the largest in the industry's history. In fact, the sales for 1955 alone far exceeded the total sales for the first 24 years of the industry. Or putting it another way, the amount of LP-gas sold in 1955 far exceeds the total amount of LP-gas sold in all of the years prior to 1946. Competition in the fuel market remains keen and the LP-gas industry must maintain its alertness and initiative if it is to continue to grow.

Complete weather conditioning is just around the corner. This is a "natural" for the gas industry and offers tremendous opportunities for the future growth and for smoothing out the winter-summer ratio. Weather conditioning (winter heating-summer cooling), motor fuel, and house heating applications are the markets offering the greatest sales potential for the LP-gas dealer. LP-gas for chemical purposes will continue to rise significantly.

1956 should be another spectacular growth year for the industry. ★ ★ ★

FEATURE
American Gas Journal

FIG. 1. A load of 15 die blocks is shown being removed for quenching after heating in the new, completely automatic program controlled furnace installed at Heppenstall. The work load, weighing 23,832 lb, has been heated in 3½-hr, compared with 20 to 30 hr cycles for each of 12 adjoining furnaces.

New Radiant Gas-Fired Method Speeds Die Block Heating

H. C. Grim
Vice President, Heppenstall Co.

HEATING DIE BLOCKS FOR HARDENING is no longer a 20 to 30 hour operation at Heppenstall's Pittsburgh plant. A new, completely automatic program-control heating method, which increases heating rates to 4½ times faster than previously attained, reduces the cycle to only 3 to 4 hours, for work loads to 20 tons.

The fast heating is performed in a gas-fired, car-bottom type furnace, designed and built by Selas Corporation of America, employing patterned radiant heat. The furnace, shown in Fig. 1, not only increases the production rate 4 to 5 times, as compared with each of 12 adjoining, conventional gas-fired furnaces of approximately the same size, but achieves this increased output with 20 per cent less fuel consumption per pound of steel heated. Current production rate is on the order of 3,500,000 lb of die blocks per month.

Die block heating has been generally regarded as a critical, long-cycle operation. A typical die block steel, containing

0.50/0.60 C,
0.70/1.00 Mn,
0.04 P,
0.04 S,
0.25/0.40 Si,
0.85/1.15 Cr,
0.40/0.50 Mo,
0.06 V,

presents a heating problem. Die block steels of such composition are considered crack-sensitive if not heated uniformly. Uniformity can only be obtained, under conventional heating methods, by slow heating and soaking.

The situation is complicated, in die block heating, by the relatively large sizes of steel sections involved. Blocks processed at Heppenstall range from 8 to 24-in. in thickness, and a block 18-in. thick by 24-in. high by 66-in. long, weighing 8100 pounds, is not considered large.

As a result of these critical conditions, long cycle operations employ heating rates of only 100 to 150 F per hour, and soaking times of approximately ½ hour per inch of average cross-section.

The furnace is designed to heat 38,000 lb of die blocks, a work load equivalent to a single block 16-in. thick by 36-in. high by 20 ft long, in only 3 to 4 hours.

This installation is the outgrowth of a search for a heating method that would enable Heppenstall to keep pace with growing production requirements. Demands had gradually increased to the point where existing facilities were no longer adequate, and the plant was faced with the prospect of a costly expansion program. To circumvent this difficulty, it was decided to explore the possibilities of gradiation heating.

A furnace, specially engineered for die block heating, was designed to replace one of the 13 furnaces in the line.

The equipment was delivered completely fabricated and was ready for operation in one-sixth the time usually

FIG. 2. Radiant gas burner, of the nozzle mixing type, assure uniform, rapid heating of die blocks.

required for installations of this size. The fabrication feature eliminated the characteristic six weeks of confusion and interference with plant operations, which occur when furnaces are erected at the job site. Within one week from delivery, production tests were underway.

The furnace is so designed that each side wall is studded with large radiant gas burners, located to assure uniform, safe and fast heating of blocks. The burners, shown in Fig. 2, are of the nozzle mixing variety and produce a flameless radiant effect. Much of their heat is transmitted by direct radiation.

The resulting freedom from impingement allows the use of these burners close to work surfaces without danger of local "spot" heating.

Air for combustion is supplied from a 2-psig blower, while natural gas is regulated to 2½-psig. These are accurately proportioned by a Hagan ratio control system, which operates gas and air valves simultaneously, but supervises gas pressure to maintain fuel and air at near-stoichemetric proportions over a wide range of combustion rates. With the gas-air mixing at the burner nozzle, flashback is impossible. An unusually wide range of turndown is provided to meet varying furnace load requirements.

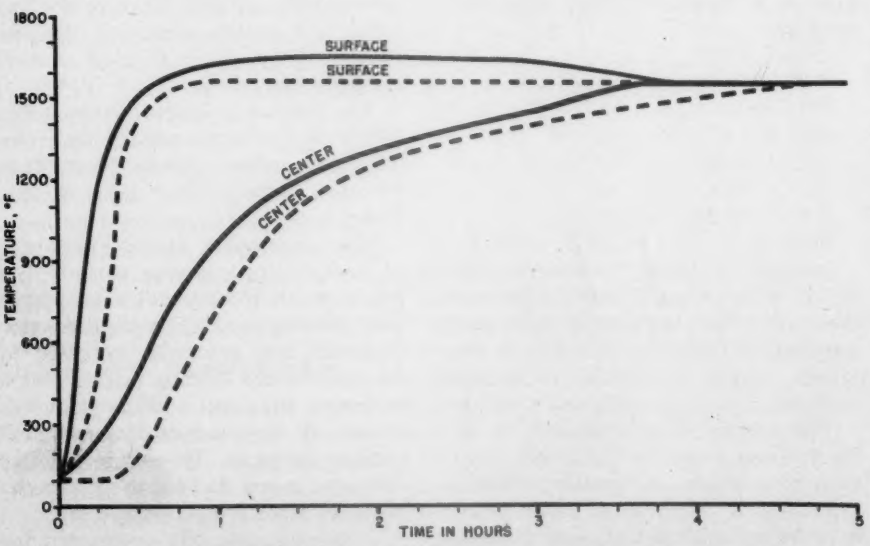


FIG. 3. Effect of two different radiant heating cycles on heating rate of a 2500-lb. work load. Dotted lines show center of work taking 4¾-hr to come to temperature. Solid line curves show times reduced by 1 hr when surface temperature is increased. Conventional heating takes 20 to 30 hr.

The ability and ease with which this gas heating method greatly accelerated the heating cycle was astonishing, but nevertheless immediately apparent. Particularly significant, also, was the exactness with which furnace and work temperatures were duplicated in production test runs from heat to heat and day to day. Temperature uniformity throughout the furnace was also precise.

Three die blocks, 18-in. thick by 24-in. high by 66-in. long, located one behind the other, were employed in the initial production tests. Control was based on readings obtained with surface and center thermocouples imbedded in the center die block, and was coordinated with a radiation pyrometer for production purposes. The center thermocouple was located in the geometric center of the work load.

In keeping with the metallurgical concept that no portion of the work should ever exceed its final temperature, the original cycle in the gradiation furnace was established.

The work surface was up to the desired temperature of 1550 F in 45 minutes. The center of the work load (18-in. thick 24-in. high, 198-in. long) took 4¾ hours to come to 1550 F from room temperature, compared with the usual 20 hours.

The die block was rushed to the lab for examination, but the most careful inspection, including sonic testing, failed to disclose any signs of cracks or other metallurgical defects.

As heat after heat of metallurgically-sound die blocks were produced, Selas engineers suggested taking fuller advantage of the heating potential. Flouting metallurgical "law",, the thermal head was increased to bring the work surface quickly to 1650 F, held there for a short interval, then gradually lowered to 1550 F. The work-center temperature responded accordingly, reaching 1550 F in 3¾ hours, one hour less than before.

That cycle has been in use since, with no noticeable deleterious effects on die block quality. The curves plotted in Fig. 3 illustrate more clearly the comparable heating effects of these two fast beating cycles.

Having proven the ability of the method to produce uniform and fast heating under precise control conditions, Selas engineers then designed and put into operation, a completely automatic program control.

The exactness with which temperature conditions were reproduced, permitted the cutting of control cams to meet the heat cycle requirements in

terms of thickness of work. Each cam is cut so as to include the entire heating cycle. Its shape is determined by the width of load only, and weight is not a factor unless extremely heavy loads, exceeding 20 tons, are heated.

Typical cam-control cycles are as follows:

	10 in. cam	12 in. cam	14 in. cam
To 1650F	40 min.	45 min.	50 min.
Hold at 1650F	55	50	75
From 1650 to 1550F	20	20	20
Hold at 1550F	70	80	85
Total furnace time	185 min. (3 hr 5 min.)	195 min. (3 hr 15 min.)	230 min. (3 hr 50 min.)

In operation, the cam functions as a remote setting to specify a desired furnace temperature at a particular time. A pneumatic impulse is sent to the work-surface temperature controller and positions the index. The controller responds by accurately proportioning the amount of fuel required to meet the work load pattern, whether increasing, decreasing or unchanging.

If the work-surface temperature controller should fail to function, for any reason, the continuous recorder of furnace roof temperatures takes over as a safety device.

In spite of momentary high peak loads, overall fuel consumption in low, in relation to adjoining conventional furnaces. In terms of cubic feet of gas per pound of work treated, the furnace consumes only 80 per cent of the fuel requirements of the other 12 units. This is a monthly average figure, and covers all operations, including heat-up.

The furnace is designed to meet heating requirements in excess of 30,000,000 Btu per hour. This assures a wide range of flexibility to meet substantial variations in work load, with the same response to program control-cycling.

Nine months of around-the-clock production operations have demonstrated that radiant gas-fired die block heating rates can be both fast and safe, with reproducible uniformity.

From the standpoint of reduced operating costs, the automatic program control is also noteworthy:

1. Overall plant efficiency is improved because close production schedule can be maintained; manpower, crane, and quenching facilities are utilized most effectively.

2. Less skilled and experienced personnel can adequately handle the heating operation.

3. Minimum attention is required, only about 20 minutes of operator-time is needed over the entire cycle.

It is apparent that high-speed heating — when applied uniformly, and under controlled conditions — obsoletes the previously-established concept of slow heating rates. * * *

Southwestern Gas Short Course Set for April at OU

The 31st Annual Southwestern Gas Measurement Short Course will be held at the College of Engineering, University of Oklahoma, Norman, Oklahoma, on April 17, 18 and 19, 1956.

K. R. Tibbets, Warren Petroleum Company, has been promoted to the executive committee of the course. **Charles R. Stephenson,** superintendent of measurement, Michigan-Wisconsin Pipe Line Company, Detroit, Michigan, has been elected to the general committee. **Roland O. Cox,** Lone Star Gas Company, is chairman of the general committee.

GENERAL COMMITTEE, 1956 SOUTHWESTERN GAS MEASUREMENT SHORT COURSE: First row, left to right: R. R. McCafferty, Pioneer Natural Gas Company; Douglas H. Lindsey, Northern Natural Gas Company; Roy S. Peace, Jr., Southern Natural Gas Company; W. H. Carson, College of Engineering, University of Oklahoma, Roland O. Cox, Lone Star Gas Company, chairman; Vars W. Bates, Southern Union Gas Company; E. L. Stark, The Foxboro Company. Second row, left to right: T. J. Kirkpatrick, Panhandle Eastern Pipe Line Company; R. F. Nowlin, United Gas Corporation; R. B. Fleske, Cities Service Gas Company; W. A. Griffin, Daniel Orifice Fitting Company; E. R. Prater, Arkansas Louisiana Gas Company. Third row, left to right: Howard S. Gray, Tennessee Gas Transmission Company; Charles D. Peterson, Universal Controls Corporation; J. F. Smith, Minneapolis-Honneywell Regulator Company; Gordon W. Swinney, Phillips Petroleum Company.

Gas Companies Form Utility Association

Eight of Washington's gas companies have formed the Association of Washington Gas Utilities. Robert C. Hayes, Seattle, has been elected vice president and executive director.

Members of the Association, who serve 34 cities of the state, are Washington Natural Gas Company of Seattle, Spokane Gas and Fuel Company, Cascade Natural Gas Corporation of Seattle, Twin Cities Gas Company of Kelso-Longview, United Gas Corporation of Camas, Natural Gas Corporation of Washington at Port Angeles, Olympic Gas Company of Port Townsend, and Portland Gas and Coke Company which serves Vancouver.

Incorporating officers of the group are: vice presidents Charles M. Sturkey, executive vice president and general manager of Washington Natural Gas Company; Stewart Matthews, president of Cascade Natural Gas Corp.; W. A. Cook, vice president of Portland Gas and Coke Company; Nathan H. Gellert, Jr., president of Spokane Gas and Fuel Company; and Leland Jones, Northern division manager of Washington Natural Gas Company, secretary-treasurer.

The association is an outgrowth of the former Committee of Washington Gas Utilities. The group was organized to coordinate public relations and promotional activities of the industry, and to work with governmental officials and public agencies in administering regulations governing natural gas which is due in the Northwest next summer.

Four Natural Gas Firms Form Pleateau Gas Company

A 3,000,000 purchase of four Colorado and Kansas natural gas companies has been announced by Ralph J. Wann, Ralph D. Murchison associate. The four firms will be consolidated into the Plateau Natural Gas Company, with headquarters in Canon City, Colorado.

The four companies, and the towns they serve, are: Kansas-Colorado Utilities, Inc. — Lamar, Granada, Holly, Walsh, Springfield, Wiley, McClave, Bristol, Hartman and Vilas in Colorado; Ulysses, Johnson, Syracuse and Kendall in Kansas.

Pikes Peak Natural Gas Company — Lyman, Hugo and Eads in Colorado.

Midwest Natural Gas Company — Florence, Portland, Fountain and Castle Rock in Colorado.

Goodland Natural Gas Company — Goodland, Kan.

The Law:

Service Extension for New Areas Depends Upon Utilities' Profits

By Leo T. Parker
Attorney at Law

Extension of Service

Another reader has asked for a dependable legal rule to determine whether or not a gas corporation must extend its lines and mains to serve new consumers in a new subdivision.

A few weeks ago a higher court rendered an important decision by which readers may, with considerable dependability, determine when a gas utility can be compelled lawfully to extend services to consumers in new communities.

In Ridley vs Pennsylvania Public Utility Commission, 94 Atl. (2d) 168, the testimony showed that Ridley, a municipality, had a population increase of 99 per cent, during a 10-year period.

A few property owners sought an extension of the utility's facilities in a new residential section, a part of which already was served by the company. The testimony showed that the extension would cost about $6950 and that the annual net income, after accounting for operating, maintenance, depreciation and taxes, would be $65.71, a return of 0.95 per cent on the investment.

Commission had rendered a decision holding that the utility was not required to make the extension on the grounds that the expense "would be an unfair burden on the company's other customers." The property owners appealed and proved that the company's balance sheet showed an increase of total assets and an increase in earned surplus. Further testimony showed prospects of additional homes being built in the area where the new extension was desired.

The higher court reversed the Commission's decision and ordered the company to make the extension saying, "A public utility cannot collect the cream in its territory and reject the skimmed milk. A public service corporation may not 'pick and choose' only presently profitable territory covered by its franchise. If a portion of the territory served is not profitable, but the entire service produces a fair return on the investment, the utility may still be required to serve the unprofitable portion, if the rendering of such service does not result in an unreasonable burden on its other service."

The utility's counsel argued that the municipality and property owners to be served should pay a part of the cost of making the extension. The higher court refused to agree with these arguments, saying, "Ordinarily, it is not the business of the citizen or consumer to construct any part of a utility's system. The action of the Commission must rest upon evidence which shows that, without the contribution of the consumers, the cost of construction would materially handicap the utility in securing a fair return on all its operations."

For comparison, see Hoffman vs Public Service Commission, 99 Pa. 429. This court explained that the obligation of a public service commission is to exercise its power and discretion reasonably and the same rule applies as well to patrons and the public as to the utilities. This court said, "The Commission operates on a two-way street. The primary object of the public service laws is not to establish a monopoly or to guarantee the security of investment in public service corporations, but first and at all times to serve the interests of the public."

Of course, there are instances where, under special circumstances a public service commission may, in the exercise of its administrative discretion, require consumers to participate in the cost of construction. See Altoona vs Pa. P.U.C. 77 A (2d) 740.

No inflexible rule can be laid down. Participation in construction costs cannot be exacted indiscriminately and it cannot be required upon a mere showing that an extension will not immediately produce an adequate profit for the utility company.

Generally speaking, the extension of gas service of a public utility is dependent on the profit which may reasonably be expected therefrom. Although in some cases such extensions may be ordered, though the immediate result may entail financial loss to the company, the company should not be subjected to unreasonable expenditures, nor the consuming public be unduly burdened, because of over-development or premature development of scattered sections in advance of normal area growth. Moreover, where there is no immediate chance of the company earning profits, the court will not order an extension. See Sherman vs Public Service Commission, 90 Pa. Super 523. In this case the testimony showed that a company was requested to extend its mains to lots "located on the hillside at elevations varying from 1040 to 1150 ft." To supply 10 new consumers, the company would have been required to spend $14,564.00. The higher court refused to order the company to extend its service.

FEATURE
American Gas Journal

Appliance Hazards Ruled On By Courts in Legal Action

Under what circumstances is a gas company liable in damages for an explosion caused by a defective gas appliance or pipes owned and operated by a consumer?

While matters of this type are not the primary concern or responsibility of gas company sales departments, the broad implications of the answer—as reflected in court decisions—has interest for sales departments, as they impinge upon overall corporate welfare of the companies.

Recently a court rendered a decision which answers this question. This court laid down this law: A gas company is liable and guilty of negligence if a leak in a customer's pipes and appliances causes injury to persons or property, provided the company has sufficient notice of such leak and having such notice: negligently inspects or negligently repairs; agrees and assumes to inspect and repair, and then fails to do so; refuses to inspect and repair knowing a dangerous condition exists, and with such knowledge fails to shut off its gas supply.

In the case of Bellefuil v. Willmar Gas Company, 66 N. W. (2d) 779, testimony showed that a property owner notified a gas company that the pilot light in his water heater would not stay lighted and that, if someone was not sent to look at it, he would have to take it out. The company did not send out a serviceman for a week. In the meantime an explosion caused serious injuries to the property owner, and extensive damages to his home.

FPC REPORT

TEXAS GAS TRANSMISSION ORPORATION has been authorized nearly 200 miles of new pipe line on system and add 19,190-hp in com-essor facilities. The projects, which ill cost an estimated $19,969,000, in-ude a 105-mile 20-in. supply line om Eunice to East Lake Palourde s field in south Louisiana. The new cilities will be used to increase firm quirements of Texas Gas' customers some 108,598,000 cu ft per day over esently authorized 1957-58 winter rvices.

PANHANDLE EASTERN PIPE INE COMPANY has been ordered refund a total $36,116,056, plus in-rest at 6 per cent annually, to its holesale natural gas customers for e period from February 20, 1952 rough April 30, 1954. A rate in-rease subject to refund was in effect uring that period. The refund resulted om the commission s order of April 5, 1954, which reduced a proposed crease from $21,400,000 annually $12,778,864 annually.

GULF INTERSTATE GAS COM-ANY, which transports gas from ouisiana to Kentucky solely for nited Fuel Gas Company under a ost of service formula, is having its tes investigated. Under question are ertain items of cost included in Gulf nterstate's rates and charges to United uel and the classification of those ems of cost by account. The FPC id that if it finds any items improperly etermined by Gulf Interstate, it will rescribe the costs that can be used, te of depreciation, fair rate of return, ccount classifications, and basis of tes to United Fuel.

ATLANTIC GAS LIGHT COM-ANY, Atlanta, Georgia, has been ex-mpted from regulation under the atural Gas Act under terms of the inshaw Amendment. The company is e 79th to be exempted. It operates cilities in both Georgia and South arolina, but its distribution systems the two states are not intercon-ected, and all interstate natural gas is onsumed within the same state in hich it is purchased.

MONTANA-DAKOTA UTILI-IES COMPANY has been authorized acquire the pipe line facilities of ontana-Wyoming Gas Pipe Line ompany. The facilities, which include me 340 miles of pipe line and com-ressor stations, were built in 1950 nd have been operated by Montana-akota under lease.

DUKE POWER COMPANY of Charlotte, North Carolina, will get an increase from 30,000,000 to 50,000,-000 cu ft per day maximum from Transcontinental Gas Pipe Line on an interruptible basis for use in an electric generating plant.

IRON RANGES NATURAL GAS COMPANY, St. Paul, Minnesota, has applied for a permit to build a 68-mile transmission system and 47 miles of supply laterals to various towns and cities on the Mesabi Iron Range in Minnesota. Cost of the project is estimated at $2,800,000. The firm proposes to buy 55,000,000 cu ft daily from the Midwestern Gas Transmission Company, which now has application pending before the FPC for construction of a 1760-mile pipe line system from the U. S.-Canadian border to Tennessee.

NORTHERN NATURAL GAS COMPANY'S proposed system expansion program, embracing a total of some 654 miles of pipe line and 12,-640-hp in compressor capacity, to supply new and existing customers in Minnesota, Wisconsin, South Dakota, and Iowa, will be heard by the Commission on January 23.

COMMISSIONER SEABORN L. DIGBY has been re-elected to serve as vice chairman of the FPC during the calendar year 1956. Digby, a member since August, 1953, served as vice chairman in 1955. He is a native of Louisiana, was formerly Commissioner of Conservation in Louisiana.

MIDWESTERN GAS TRANSMISSION COMPANY'S application to build a 1760-mile pipe line system from the U. S.-Canadian border to Tennessee, and to import up to 204,000,000 cu ft of gas per day from Canada, has been accepted by the FPC. No hearing date has been set. In three joint applications, also accepted, Tennessee Gas Transmission Company proposes to make additions to its system of about 175 miles of gathering lines in Texas and Louisiana, and 56,080 horsepower to its system, deliver 204,-000,000 cu ft daily to Midwestern, build 162 miles of loop line on its system, and requested authority to deliver over 86,000,000 cu ft per day to Trans-Canada near Niagara Falls, New York.

UNITED GAS PIPE LINE COMPANY'S proposed rate increase of $9,978,000 annually on wholesale natural gas, will be heard commencing February 6. The rates would affect about 50 of United's wholesale customers in Alabama, Florida, Louisiana, Mississippi, and Texas.

Texas Eastern Files for Pipe Line Expansion

Texas Eastern Transmission Corporation has filed an application with the Federal Power Commission for authorization to construct a new 30-in. pipe line from the vicinity of Beaumont, Texas, to the vicinity of McAllen, Texas, and for the expansion of the existing 30-in. system from Beaumont to New Jersey by addition of compressor horsepower and loop lines as necessary. Estimated cost of the project is approximately $150,000,000.

The proposed facilities will provide Texas Eastern with additional supply facilities and increased system capacity to provide for the sale, principally to existing customers, of approximately 250,000,000 cubic feet of additional gas per day.

Texas Eastern recently negotiated a contract with Petroleos Mexicanos under the terms of which Texas Eastern can purchase and receive at the international border between Mexico and the United States up to 200,000,000 cubic feet of gas per day.

The proposed facilities include approximately 422 miles of 30-in. pipe line from the Rio Grande River near McAllen, Texas, to Texas Eastern's Vidor, Texas, compressor station.

Washington Natural Plans $8 Million 1956 Expansion

Washington Natural Gas Company plans to spend about $8,000,000 for new construction and other preparations for natural gas in 1956. It is part of a $22,000,000-plus expansion program for a five-year period.

Most of the 1956 expenditure will come in the first nine months of the year. About $5,300,000 will be spent for supply mains to bring natural gas into the company's distribution systems, and about $1,500,000 will go for new distribution mains, services, meters, and pressure regulators.

In addition, conversion of customers' equipment and appliances, to be done by Conversions and Surveys, Inc., at no charge to the customers, will cost the company about $1,000,000.

The major expediture, $5,300,000, will be made for supply mains; $3,000,000 in the Seattle area, about $1,500,000 in the Tacoma area, $600,000 in the Everett vicinity and about $200,000 in the Centralia-Chehalis area. The Olympia area will be served by the company's existing supply main from Tacoma until 1957 when an additional main will be built to that area.

Texas Gas Issues Appeal to Industry

"BIG opportunities await industry in the BIG RIVER region" is the theme of a colorful 16-page brochure now being distributed by Texas Gas Transmission Corporation of Owensboro, Kentucky, as part of the company's efforts to attract industry to its service area.

The publication is based upon the growth and advantages of the 113 counties along the Texas Gas natural gas pipe line system in seven principal service states — Louisiana, Mississippi, Arkansas, Tennessee, Kentucky, Indiana and Ohio. This area is called the "Big River" region because of the many navigable streams that contributed to its early development.

Prepared principally for distribution to industrialists, plant location agencies and investors, the brochure also will be distributed to a representative list of business and civic leaders in the Texas Gas service as an information piece.

Included in the presentation is information on transportation, power, fuel, labor, natural resources, research facilities and recreation. A page of the brochure is devoted to "The Calvert City Story." It tells of the phenomenal growth of a typical small community of the area, Calvert City, Kentucky, which almost overnight became the center of $70,000,000 investment in new chemical plants.

Alabama Gas Corporation Changes Fiscal Year

Alabama Gas Corporation has changed its fiscal year to end September 30, from December 31, to coincide with its natural business year. This has been done to have the fiscal year include a full heating season and not, as heretofore, parts of two different seasons.

Appliance Men Hail Easing of Mortgage Curbs

Promised relaxation of the Home Loan Bank Board's September directive sharply curtailing lending by the Home Loan Banks to member associations was hailed today by GAMA as an indication that the Government intends to "renew its encouragement of new home construction and modernization."

The Board's plan to authorize standby credits for members savings and loan associations will help maintain the needed rate of new home building and enable builders and appliance makers to wage a successful war on obsolescence in homes, institutions, schools, plants and commercial establishments.

GAMA members, who turn out 95 per cent of all the equipment used in the production, transmission, distribution and utilization of gas, had begun to feel the effects of the HLBB restrictions. Prior to the September order, the gas appliance industry had become a reliable index to the progress of home building. As such, industry was among the first, after the order was invoked, to discover how sensitive the mortgage market is to the imposition of general credit restrictions.

At the current 1,300,000-a-year rate of home construction, the present level of housing starts is "at least 33 per cent below the needs of a growing, migrating public."

AGA Conference To Be Held In Chicago

Subjects ranging from "Economic Analysis and Forecast" to "Canadian Gas Resources," will be included in the program of the second annual General Management Conference of the American Gas Association at the Conrad Hilton Hotel, Chicago, April 4, 5 and 6.

Topics of importance and interest to top management and personnel have been selected by the Arrangements Committee of the General Management Section.

"Something for everyone" is the keynote of AGA's newest section conference. Striking a balance between important subjects of current interest to management in general, and the detailed work of its sub-committees, the committee has scheduled a program that will benefit all gas industry management.

John B. Barker, Northern Illinois Gas Company, adjusts safety belt installed in one of utility's automobiles as part of a company-wide project which is now underway. Both the driver and companion seats will be equipped with safety belts.

Industrial Gas Men Honor Late Pioneer

The late Adolph W. Machlet, gas industry pioneer and inventor of more than 60 processes in the metallurgical field, was honored by the gas industry during the recent National Metal Congress and Exposition in Philadelphia.

Machlet, whose reversal of the Bunsen system of combustion in 1887

made possible the thousands of applications of gas heat now use in American industry, was awarded the distinguished service award of the Industrial Division of the Gas Appliance Manufacturers Association.

The citation was accepted by P. C. Osterman, president of the American Gas Furnace Company of Elizabeth, New Jersey, who was associated with Machlet in that company for 54 years until his death on September 27 at the age of 90. Machlet was chairman of the board of American Gas Furnace Company and president and treasurer of the subsidiary American Metal Treatment Company when he died.

The GAMA award was presented by Alvin M. Stock, chairman of the association's Awards Committee.

Experimental Furnace Available

John Zink Company's test furnace is now available without charge to the process industries. This experimental furnace is designed to permit testing at heat releases from 500,000 to 20,000,000 Btu per hour.

Facilities include: (1) Completely watercooled furnaces 8 in. by 12 in. by 10 in. high. (2) Provision for either vertical or horizontal firing. (3) Provision for either forced or natural draft firing. (4) Automatic boiler capable of delivering 2500 lb per hour saturated steam at 150 lb pressure. (5) Heavy Bunker C oil or No. 2 distillate oil at any temperature up to 250 F and pressures up to 200 lb. (6) Natural gas 1050 Btu per cubic foot at 25 psi. (7) Blower for delivery of air at 2 in. H_2O. (8) Pressure taps into furnace for Orsat sampling. (9) Three strategically located pyrex glass peep holes. (10) Electric current 220 v 3 ph 220 v Iph 110 v. (11) Complete machine shop.

NIG Establishes New Records in Gas Send-Out

Northern Illinois Gas Company's send-out records were broken on successive days in November. The previous high of 355,173,100 cu ft of gas, established last January 27, 1955, first was eclipsed November 28 when the maximum use reached 361,000,000 cu ft, and then again the following day (November 29) as the company's maximum noon-to-noon send-out totaled approximately 369,300,000 cu ft.

Marvin Chandler, president, said it was necessary to augment the company's pipe line supply and other peak shaving operations with about 33,500,000 cu ft of natural gas during the first 24-hour period and approximately 34,500,000 cu ft the second. Chief factor responsible for establishing the new maximum send-out records was the connection of nearly 29,000 additional residential space heating customers to the company's system during the past 12 months.

Consumers Power Hits New Gas Peak

An all-time record for natural gas use by the 400,000 gas customers of Consumers Power Company has been set for a 24-hour period. A peak of 443,000,000 cu ft was established, breaking the previous 382,000,000 cu ft peak hit in 1955.

Dan E. Karn, president, attributes the record high to a combination of conditions, including the addition of 22,000 space-heating customers during the first ten months of 1955, increased industrial and commercial gas-consuming processes and the impact of zero weather during the survey. The November peak date is earlier in the winter than usual.

An extremely interesting and worth-while Round-Table Conference on Distribution Design and Construction was sponsored recently by the Southern Gas Association. The meeting was held at the Marion Hotel in Little Rock, Arkansas, with 23 delegates, representing 13 companies, in attendance.

James L. Walker (seated center) of the Arkansas Western Gas Company served as the chairman of the conference. Mr. Walker's agenda included a thorough discussion of distribution system design, materials, cathodic protection, methods of testing new mains and service lines for leakage, methods of cleaning new mains prior to placing them in operation, and cost experience over the past several years and measures undertaken or planned to reduce such costs. These practical discussions afforded workable knowledge to all in attendance.

Deaths

M. A. Abernathy

M. A. Abernathy, 62, senior vice president and a member of the board of directors of United Gas Corporation died November 4, 1955 after a heart attack.

His long career with United Gas and predecessor companies dates back to 1920, when he joined the Magnolia Petroleum Company.

In addition to his duties with United Gas, Abernathy was president of Escambia Bay Chemical Corporation.

Horace P. Liversidge

Horace P. Liversidge, 77, chairman of the board of the Philadelphia Electric Company, died December 8 at Jefferson Hospital in Philadelphia. He had been in the utility industry 75 years.

Consumers Power Plans Expansion Program for 1956

A $17,000,000 construction and improvement program for gas facilities has been announced by Consumers Power Company, in Michigan.

The 1956 program has been made necessary by the growing use of gas in the company's 64-county Michigan service area. Gas service expansion is of a major nature in the rapidly growing Oakland and Wayne County areas adjacent to Detroit.

Southern Indiana Gas To Offer Stock Common

Southern Indiana Gas and Electric Company has filed a petition with the Public Service Commission of Indiana for authority to make a common stock subscription offer of 83,030 shares to common stockholders of record February 21, 1956 on a one-for-eleven basis. The company expects to raise about $2,400,000 through this offering, and proceeds are to be used for new construction.

PG&E Cuts Rates in Fringe Areas $556,440 a Year

Reductions in gas rates for customers in unincorporated areas where population densities have increased, have been announced by Pacific Gas and Electric Company. The filing of a formal advice with the California Public Utilities Commission brought to $1,000,000 the total in rate reductions for domestic and small commercial customers filed by PG&E with the Commission in 1955.

Effective with meter readings in January, 34 sections of Northern and Central California will enjoy the lower gas rates — 24 for both gas and electricity and 10 for gas.

IGT Publishes Study of Fundamental Reactions

The results of 10 years of study of two of the fundamental reactions in the production of manufactured gas have been published as Institute of Gas Technology Research Bulletin No. 19, "Reactions of Carbon With Carbon Dioxide and With Steam," by C. G. von Fredersdorff.

Studies of high-temperature (1700 to 2500 F) reactions between a solid fuel and oxidizing gases are presented as (a) the development of mathematical procedures which may have general use in estimating physical and chemical factors associated with carbon gasification, and (b) application of these procedures to the interpretation of steam and carbon dioxide decomposition rates and gas analyses.

Most of the experimental data were obtained with continuous flow fixed-bed reactors operating at atmospheric and superatmospheric pressures in the Institute's laboratories in Chicago. Results reported by others are analyzed in a literature study and addendum.

The study has been sponsored since 1945 by AGA under its Promotion-Advertising-Research (PAR) plan.

Washington Natural to Obtain Changeover Data in Seattle

Surveys preliminary to changeover of customers' gas heating equipment and appliances to accommodate natural gas have begun in North Seattle. Conversions and Surveys, Inc., under contract to make the changeover for Washington Natural Gas Company's entire system when natural gas arrives late next summer, is making the surveys.

Heating customers are being surveyed now, but the work will eventually include household appliances. Data obtained will determine the adjustments necessary to make equipment, now using manufactured gas, burn natural gas efficiently. During the changeover period, a crew of 350 specialists will make the adjustments at no charge to customers.

Seattle has been divided into 25 sections. Sections will be changed over one at a time with present plans calling for three per week. Section 20, in the vicinity of Renton, nearest to the company's south pipe line city gate, will be the first to get natural gas.

Sectional conversions will progress through the center of the city to the canal from the south city gate, and from the north city gate to the canal.

Planning for the changeover has been in progress for 18 months.

Gas Industry Advisory Council Membership Extended to 1956

The term of the present membership of the Gas Industry Advisory Council has been extended to December 31, 1956.

Those appointed to the Council are: Acker, Ernest R., *Central Hudson Gas & Electric Corporation, Poughkeepsie, New York;* Adams, B. C., *The Gas Service Company, Kansas City, Missouri;* Allen, Thomas H., *Memphis Light, Gas and Water Division, Memphis, Tennessee;* Banks, F. M., *Southern California Gas Company, Los Angeles, California;* Baxter, L. L., *Arkansas Western Gas Company, Fayetteville, Arkansas.*

Beckjord, Walter C., *The Cincinnati Gas & Electric Company, Cincinnati, Ohio;* Bowes, Joseph, *Oklahoma Natural Gas Company, Tulsa, Oklahoma;* Boyer, Edward G., *Gas Department, Philadelphia Electric Company, Philadelphia, Pennsylvania;* Burns, D. T., *Citizens Gas and Coke Utility, Indianapolis, Indiana;* Byrne, Walter S., *Seattle Gas Company, Seattle, Washington.*

Caine, W. E., *Texas Eastern Transmission Corporation, Shreveport, Louisiana;* Clark, Glenn W., *Cities Service Gas Company, Oklahoma City, Oklahoma;* Bertolette, Norman B., *The Hartford Gas Company, Hartford, Connecticut;* Bjork, Eskil I., *The Peoples Gas Light & Coke Company, Chicago, Illinois;* Boothby, Everett J., *Washington Gas Light Company, Washington, D. C.*

Eacker, E. H., *Boston Consolidated Gas Company, Boston, Massachusetts;* Falck, Edward, *Edward Falck & Company, Washington, D. C.;* Ferguson, John A., *Independent Natural Gas Association of America, Washington, D. C.,* Fink, Henry, *American Natural Gas Service Company, Detroit, Michigan;* Fletcher, R. Leslie, *Providence Gas Company, Providence, Rhode Island.*

Forbes, Harland C., *Consolidated Edison Company of New York, Inc., New Work, New York;* Freeman, N. W., *Tennessee Gas Transmission Company, Houston, Texas;* Gellert, N. Henry, *Seattle Gas Company, Seattle Washington;* Gueffroy, C. H., *Portland Gas & Coke Company, Portland, Oregon;* Comerford, James, *Consolidated Natural Gas Company, New York, New York.*

Conover, A. W., *Equitable Gas Company, Pittsburgh, Pennsylvania;* Crane, Charles P., *Consolidated Gas Electric Light and Power Company of Baltimore, Baltimore, Maryland;* Crocker, Stuart M., *The Columbia Gas System, Inc., New York, New York;* Hawley, George S., *The Bridgeport Gas Light Company; Bridgeport, Connecticut;* Hedrick, Joseph J., *Texas Illinois Natural Gas Pipeline Company, Chicago, Illinois.*

Heyke, J. E., Jr., *The Brooklyn Union Gas Company, Brooklyn, New York;* Hirschfield, Norman, *S. N. G. Industries, Oklahoma City, Oklahoma;* Hulcy, D. A., *Lone Star Gas Company, Dallas, Texas;* Kayser, Paul, *El Paso Natural Gas Company, El Paso, Texas;* Kendrick, William L., *Boston Public Schools, Boston, Massachusetts.*

Lever, T. S., *Philadelphia Gas Works, Philadelphia, Pennsylvania;* Ligon, Wister H., *Nashville Gas Company, Nashville, Tennessee;* Lungren, E. E., *Northern Illinois Gas Company, Aurora, Illinois;* Macomber, Alexander, *Gas Service, Inc., Boston, Massachusetts;* Maguire, W. G., *Panhandle Eastern Pipe Line Company, New York, New York.*

Marbury, W. G., *Mississippi River Fuel Corporation, St. Louis, Missouri;* Masser, H. L., *Southern California Gas Company, Los Angeles, California;* McGee, D. A., *Kerr-McGee Oil Industries, Inc., Oklahoma City, Oklahoma;* Merriam, J. F., *Northern Natural Gas Company, Omaha, Nebraska;* Mitchell, Dean H., *American Gas Association, Care, Northern Indiana Public Service Company, Hammond, Indiana.*

Otto, Robert W., *Laclede Gas Company, St. Louis, Missouri;* Parks, R. T., *Public Service Company of Colorado, Denver, Colorado;* Rather, C. P., *Southern Natural Gas Company, Birmingham, Alabama;* Reid, James C., *Southern Union Gas Company, Dallas, Texas;* Smith, Cecil W., *Montana-Dakota Utilities Company, Minneapolis, Minnesota.*

Smith, Frank C., *Houston Natural Gas Corporation, Houston, Texas;* Stack, A. H., *The Tampa Gas Company, Tampa, Florida;* Stevenson, W. T., *Texas Gas Transmission Corporation, Owensboro, Kentucky;* Sutherland, Norman R., *Pacific Gas and Electric Company, San Francisco, California;* Taber, R. G., *Atlanta Gas Light Company, Atlanta, Georgia.*

Walker, Tom P., *Transcontinental Gas Pipe Line Corporation; Houston, Texas;* Ware, John H., III, *Penn Fuel Gas, Inc., Oxford, Pennsylvania;* Weiser, John A., *The Newport Gas Light Company, Newport, Rhode Island;* Weyland, A. H., *Arkansas Louisiana Gas Company, Shreveport, Louisiana;* Wolf, H. Carl, *American Gas Association, New York, New York;* Wrench, H. K., *Minneapolis Gas Company, Minneapolis, Minnesota.*

Men At Work IN THE GAS INDUSTRY

● **E. Clyde McGraw** has been elected executive vice president of Trans-continental Gas Pipe Line Corporation, Houston. He has been Transco's vice president in charge of operations since joining the company in 1950.

● **Charles G. Simpson** has been elected vice president of the United Gas Improvement Company and appointed general manager of the Philadelphia Gas Works Division. He replaces **Thomas S. Lever,** retired.

Simpson has been associated with PGW for 30 years in various capacities, and since January, 1954, has been director of finance and accounts. Lever had been with UGI and PGW since 1903.

● **E. M. Kelley,** El Paso district manager of Southern Union Gas Company, has been promoted to the new position of Southern Division Manager of the gas company's Western properties. His headquarters will remain in El Paso. Kelly will supervise and assist in the operations of the company's Southeastern New Mexico and West Texas districts in addition to his present supervision of the El Paso and Alamogorda districts.

E. M. Kelley

Kelley has been in the employ of Southern Union 26 years.

● **A. H. Weyland,** president of Arkansas Louisiana Gas Company since 1945, has been elected chairman of the board of directors of the gas company, and **J. C. Hamilton,** senior vice president, was elevated to the presidency. The board also elected **James C. Templeton,** formerly of Ada, Oklahoma, a vice president of the company, and elected **M. D. LaGrone** an assistant secretary.

H. R. Searing

H. C. Forbes

● **H. R. Searing** has been appointed chairman of the board for Consolidated Edison Company, Inc., New York. **Harland C. Forbes** has been named president.

Searing has been president of the utility company for almost seven years and its chief executive officer since 1953. In his new post he remains chief executive officer. Forbes has been executive vice president since 1949. This office is now discontinued.

● **Jack Clarke,** formerly director of public relations for Texas Eastern Transmission Corporation, has been elected executive vice president of Freestate Industrial Development Company. In his new capacity, Clarke will act as general manager of Freestate. He will also assist in the administration of Cherokee Farms, Inc., an adjacent residential subdivision.

Freestate offices will be in the Henry C. Beck Building in Shreveport, Louisiana.

● **Frank R. Palmer** has been elected a director of the United Gas Improvement Company. He is president of the Carpenter Steel Company, Reading, Pennsylvania.

● Promotion of two Washington Natural Gas Company sales division men, has been announced. **Robert L. Beardsley** has been named industrial sales manager and **Carl A. Linde,** will be assistant commercial sales manager.

● **W. A. Strauss** has been named director of Northern Natural Gas Company's newly established Certificate Department. The new department is primarily concerned with acquiring authorities from the Federal Power Commission in Washington, D. C.

Strauss is a graduate of Iowa State College with a bachelor of science degree in general engineering, and has been associated with Northern since 1948 when he began working in the Engineering Department. In 1951 he was transferred to the General Department as staff assistant and in 1952 was promoted to administrative assistant.

● Three new members were elected to the board of directors of Southern Union Gas Company, headquarters in Dallas, Texas, at a special meeting of the board of directors recently. They are **Scott Hughes,** Dallas, first vice president of Southern Union; **Franklin W. Denius,** Austin, member of the law firm of Looney, Clark and Moorhead; and **John MacGuire,** El Paso rancher and contractor. **Willis L. Lea, Jr.,** Dallas, general attorney for Southern Union, was elected vice president of the company.

● **S. F. Wikstrom,** promotion manager, American Gas Association, has been appointed Coordinator, Promotion and Advertising. Wikstrom succeeds **H. Vinton Potter,** who resigned to become vice president in charge of sales, Oklahoma Natural Gas Company.

Charles R. Bowen, manager, New Freedom Gas Kitchen and Laundry program, AGA, has been appointed promotion manager of the Association.

● **Robert J. Fitzpatrick** has been appointed director of public relations for Texas Eastern Transmission Corporation. He formerly was vice president of Albert Frank-Guenther Law, Inc., a New York public relations counseling and advertising firm.

C. G. Simpson

W. A. Strauss

J. C. Templeton

M. D. LaGrone

J. C. Hamilton

A. H. Weyland

CALENDAR OF THE GAS INDUSTRY

JANUARY 1956

10 NEGA, operating division, Hotel Statler, Boston.

12 Pennsylvania Natural Gas Men's Association, Hotel William Penn, Pittsburgh.

13 SGA air conditioning sales conference, Jackson, Tennessee.

16-17 AGA committee on economics, Jung Hotel, New Orleans.

16-17 AGA operating section, production conference program committee, Headquarters.

16-18 AGA home service workshop, Hotel Mayo, Tulsa.

17-18 AGA subcommittee on approval requirements for central heating gas appliances, AGA Laboratories, Cleveland, Ohio.

19 AGA personnel committee and EEI industrial relations committee, Hotel Biltmore, New York.

19 NEGA operating division, Hotel Statler, Boston.

19-20 AGA subcommittee on approval requirements for gas unit heaters and duct furnaces, AGA Laboratories, Cleveland, Ohio.

19-26 National Housewares & Home Appliance Manufactures Exhibits, Navy Pier, Chicago.

20 SGA air conditioning sales conference, Shamrock Hotel, Houston.

20 SGA employee relations conference, Shamrock Hotel, Houston.

22-26 National Association of Home Builders, convention and exposition, Chicago. (AGA exhibit.)

23-24 Industrial Heating Equipment Assn., LaSalle Hotel, Chicago.

23-25 American Society of Heating and Air Conditioning Engineers, Cincinnati, Ohio.

27 SGA domestic meters and regulators conference, Heidelberg Hotel, Jackson, Mississippi.

27 SGA accident prevention conference, Jung Hotel, New Orleans.

31-Feb. 1 AGA subcommittee on approval requirements for gas water heaters, AGA Laboratories, Cleveland, Ohio.

FEBRUARY

2 AGA subcommittee on approval requirements for gas-fired incinerators, AGA Laboratories, Cleveland, Ohio.

3 AGA subcommittee on listing requirements for relief and automatic gas shut-off valves for use on water heating systems, AGA Laboratories, Cleveland, Ohio.

6 AGA operating section, customer service committee, Hotel Cleveland, Cleveland, Ohio.

6-10 Western Winter Radio-TV and Appliance Market, Western Merchandise Mart, San Francisco.

14-15 AGA subcommittee on approval requirements for domestic gas ranges, AGA Laboratories, Cleveland, Ohio.

16 AGA subcommittee on approval requirements for gas-fired room heaters, AGA Laboratories, Cleveland, Ohio.

16-17 SGA accounting management conference, Jung Hotel, New Orleans.

16-17 SGA sales executives conference, Jung Hotel, New Orleans.

17 AGA subcommittee on listing requirements for domestic gas appliance pressure regulators, AGA Laboratories, Cleveland, Ohio.

MARCH 1956

1-2 SGA distribution management conference, Jung Hotel, New Orleans.

1-2 SGA transmission management conference, Jung Hotel, New Orleans.

8-9 AGA Residential Gas Sales Committee, St. Charles Hotel, New Orleans.

12-16 National Association of Corrosion Engineers, Hotel Statler, New York.

15-16 American Trade Association Executives, Washington conference, Statler Hotel, Washington.

16 Metropolitan Heating and Air Conditioning Council, annual meeting, Hotel Statler, New York City.

19-21 Mid-West Gas Association, Hotel Fontenelle, Omaha, Nebr.

22-23 NEGA, annual meeting, Hotel Statler, Boston.

22-23 Oklahoma Utilities Association, annual meeting, Biltmore Hotel, Oklahoma City.

APRIL 1956

3-4 AGA research and utilization conference, Cleveland, Ohio.

4-6 AGA General Management Section, spring conference, Conrad Hilton Hotel, Chicago.

PROFESSIONAL DIRECTORY

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